

SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

BETTY BULLOCK,)
Plaintiff,)
vs.) No. BC 249171
PHILIP MORRIS INC., a corporation;) VOLUME I
DUPAR'S RESTAURANT, a corporation;)
and DOES 1-100, inclusive,)
Defendants.)

Deposition of PAUL SLOVIC, taken
at 777 South Figueroa Street, 44th
Floor, Los Angeles, California,
commencing at 9:32 A.M., Tuesday,
May 7, 2002, before Kellie
Mitchell, CSR No. 7273.

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APPEARANCES OF COUNSEL:

FOR THE PLAINTIFF:

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FOR THE DEFENDANT PHILIP MORRIS:

ARNOLD & PORTER
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PAUL SLOVIC,
the witness, having been administered an oath
in accordance with CCP Section 2094, testified
as follows:

EXAMINATION
BY MR. McCARTER:
Q. Good morning, Dr. Slovic. I introduced
myself off the record. My name is Bob McCarter. I
am an attorney with Arnold & Porter and I represent

09:32 AM

11 Philip Morris. You've been deposed before?
12 A. Yes.
13 Q. So I'm not going to bother to go over the
14 ground rules here. If you have any questions about
15 any of my questions if they are vague, if you don't 09:32 AM
16 understand them, please let me know and I'll try to
17 rephrase it. Let's mark this as Exhibit 1.
18 (Defendant's Exhibit 1 was
19 marked for identification and is
20 annexed hereto.) 09:33 AM
21 BY MR. McCARTER:
22 Q. Will you identify this for the record,
23 Dr. Slovic?
24 A. It's my resume, C.V.
25 Q. And it's an up-to-date version of your 09:33 AM
4
1 C.V.? 09:33 AM
2 A. Pretty much, yes.
3 Q. And you brought it here with you this
4 morning?
5 A. No, I didn't. This is probably as recent 09:33 AM
6 -- it's probably up-to-date as it is.
7 Q. You brought it with you to the deposition
8 this morning?
9 A. No, I didn't.
10 Q. Oh, you didn't. Okay. 09:33 AM
11 MR. PIUZE: I may have brought it to the
12 deposition --
13 MR. McCARTER: That is where I'm confused.
14 MR. PIUZE: -- at your bidding.
15 BY MR. McCARTER:
16 Q. You gave that to Mr. Piuze and Mr. Piuze,
17 as far as you know, brought it to the deposition?
18 A. Yes.
19 MR. McCARTER: Let me mark that as
20 Exhibit 2. 09:33 AM
21 (Defendant's Exhibit 2 was marked
22 for identification and is
23 annexed hereto.)
24 BY MR. McCARTER:
25 Q. Exhibit 2, Dr. Slovic, is a notice of the 09:34 AM
5
1 deposition today. Have you seen that before? 09:34 AM
2 A. Yes, I have seen this.
3 Q. Okay. Do you recall when the first time
4 was that you saw it?
5 A. I'm not specific on that. 09:34 AM
6 Q. And you'll see Exhibit A which starts on
7 Page 3 lists documents that we asked you to bring to
8 this deposition?
9 A. Yes.
10 Q. I just want to go through the list and see 09:34 AM
11 if you've brought that or Mr. Piuze, to your
12 knowledge, has brought it on your behalf?
13 A. Okay.
14 Q. You have brought No. 1 a copy of your
15 resume or C.V., we just saw that? 09:34 AM
16 A. Uh-huh. Yes.
17 Q. And did you bring all documents or data
18 relied upon by you in formulating your opinions in
19 this case?
20 A. Well, I'm not quite sure what that would 09:35 AM
21 mean since the -- my opinions are based on my career

22 of research in risk and decision-making. I mean,
 23 it's massive.

24 Q. There are some specific documents that you
 25 cited -- that you have cited in previous expert 09:35 AM
 6

1 reports; correct? 09:35 AM

2 A. Yes.

3 Q. And you didn't bring all of those
 4 documents with you; correct?

5 A. No. 09:35 AM

6 Q. Now, did you bring all writings that you
 7 reviewed or expect to review in connection with this
 8 case?

9 A. It seems to me, that's, again, very close
 10 to No. 2. I would have the same answer as to No. 2. 09:35 AM

11 Q. Let me skip ahead here. Did you bring all
 12 writings that you prepared regarding this case?

13 A. I haven't prepared any writings.

14 Q. Did you bring all writings that reference
 15 the amount of time you spent on this case? 09:36 AM

16 A. I haven't documented any time or spent
 17 much time on the case.

18 Q. How much time have you spent on the case?

19 A. One hour.

20 Q. Have you produced to us all writings by 09:36 AM
 21 Mr. Piuze or anybody from his office that were
 22 directed to you?

23 A. I have a file here of correspondence which
 24 is my file and I'll turn it over to you, I guess, I
 25 would like it back at some point. 09:37 AM
 7

1 Q. We can make copies? 09:37 AM

2 A. You can make copies.

3 Q. Let's skip ahead to the next page and talk
 4 about the things that we requested on Pages 4 and 5
 5 that deal with surveys that you've done before. 09:37 AM

6 A. Okay.

7 Q. You see under No. 12 it talks about
 8 versions of all questionnaires, data files, analytic
 9 files and so forth?

10 A. Yes. Uh-huh. 09:37 AM

11 Q. Did you bring that information related to
 12 Annenberg Survey I?

13 A. No, I didn't.

14 Q. Any reason why not?

15 A. Well, Annenberg Survey I is not my survey. 09:37 AM
 16 I didn't design it. I didn't analyze it. I don't
 17 have documentation about it.

18 Q. Do you rely on anything in Annenberg
 19 Survey I for your opinions?

20 A. Not specifically. I mean it's one of -- 09:37 AM
 21 there are many, many surveys of this perception
 22 which I've looked at over the years and it's just
 23 one of those. It's not a center piece like
 24 Annenberg Survey II is more important.

25 Q. Do you rely on Annenberg Survey I at all 09:38 AM
 8

1 for your opinions? 09:38 AM

2 A. It's only general. It asks questions
 3 about smoking in general and it fits in with a lot
 4 of other data about people's perceptions, but it's
 5 not a central aspect. If you asked me what 09:38 AM
 6 specifically do I rely on, I would have to look at

7 the survey.

8 Q. To your knowledge, do you rely on

9 Annenberg Survey I at all for your opinions? 09:38 AM

10 A. Can I look at Annenberg Survey I?

11 Q. Sure. I take it you are going to be

12 looking at the Appendix A to your book?

13 A. Right. Well, these questions I found

14 interesting, like Question 9, "Each year more people

15 die from gunshots and car accidents than die from 09:39 AM

16 smoking."

17 And as I recall, very high percentage of

18 people believe that to be true even though it's not

19 true. I mean, it's just another item in a very

20 large compendium of data that shows that people's 09:40 AM

21 perceptions of these statistics are not accurate.

22 But I mean, that is kind of all in the line of the

23 survey form.

24 Q. Okay. It's not my intention to spend a

25 lot of time on this. Let's try to speed it up some. 09:40 AM

9

1 Let me give you the pile of materials that I believe 09:40 AM

2 Mr. Piuze gave us that you likely gave him and ask

3 you to go through and identify what each of these

4 documents is and then we'll see whether they fall

5 into the categories on here. Maybe that will be a 09:40 AM

6 faster way. There is a disk in there, too, that may

7 fall out.

8 A. Okay.

9 Q. What is the first thing in there? The

10 page you just turned over? Just give a brief 09:40 AM

11 summary of it.

12 A. It's a letter to -- E-mail to Paul L.

13 Lawler saying I'm searching for the materials

14 requested in March 22nd letter.

15 Q. And what is the next document below that? 09:41 AM

16 A. It's a paper that is in press titled "The

17 Affect Heuristic."

18 Q. Why did you provide that to Mr. Piuze?

19 A. Because this is a review of research by my 09:41 AM

20 colleagues and myself and by many other people

21 showing the importance of affect in human judgment

22 and decision-making behaviors.

23 Q. And has this review that is described in

24 this article been described by you or your

25 colleagues in other literature that has been 09:41 AM

10

1 published? 09:41 AM

2 A. Yes. Well, this review is about to come

3 out soon, I believe, much of the material -- most of

4 the material in it. And there is, you know, dozens

5 and dozens of references to work that is, you know, 09:41 AM

6 all related to this. That all -- almost all of it

7 has been published in peer review journals.

8 Q. And what is the document below that?

9 MR. PIUZE: Before you talk about the next

10 document, I would just interrupt your questioning to 09:42 AM

11 say that Mr. Leiter, I believe, specifically

12 requested by letter that this witness provide that

13 document that you just questioned him about.

14 MR. McCARTER: Okay.

15 MR. PIUZE: So when you are asking him why 09:42 AM

16 he did it, perhaps he doesn't know totally why he

17 did. I think it was at your request specifically.

18 MR. McCARTER: Okay. Thank you.
19 And what the next thing you have there is
20 a computer disk? 09:42 AM
21 THE WITNESS: Yes. Yeah, this is the data
22 disk for Annenberg Survey II.
23 BY MR. McCARTER:
24 Q. What is on that data disk?
25 A. It would be the answers to the survey 09:42 AM
11
1 questions in Survey II on the part of oh, 2000 09:42 AM
2 people between the ages of 14 and 22 and about 1500
3 people of ages 23 and older.
4 Q. Would you describe the next document that
5 you have there? 09:43 AM
6 A. Well, this just says enclosed are
7 additional materials that are requested in the
8 letter of March 22nd.
9 Q. So that is sort of a cover letter
10 enclosing other materials? 09:43 AM
11 A. Cover letter, yeah, right.
12 Q. What is the next one?
13 A. The next one is a paper by a professor at
14 the University of Iowa named Paul Windschitl judging
15 the accuracy of a likelihood judgment in the case of 09:43 AM
16 smoking risk.
17 Q. And do you rely on that document for your
18 opinions in this case?
19 A. Yes, I do.
20 Q. And for what opinions do you rely on that 09:43 AM
21 document?
22 A. This is sort of an independent replication
23 of the study that is part of Annenberg Survey II
24 having to do with the reliability of the types of
25 questions that Dr. Viscusi uses to quantitatively 09:44 AM
12
1 assess people's understanding of the perceived risk 09:44 AM
2 of smoking.
3 Q. And how did Windschitl evaluate the
4 reliability of the questions that Viscusi uses in
5 this article? 09:44 AM
6 A. Do you mean what did he conclude or how
7 did he do it?
8 Q. How did he do it and what did he conclude?
9 A. He looked at over 500 people. I think
10 they were students at the University of Iowa. And 09:44 AM
11 some were smokers, some were nonsmokers. He gave
12 them Viscusi's type of question in alternative, but
13 equivalent formats similar to what I had done in
14 Annenberg Survey II and he found that there was very
15 low reliability across formats and he concluded that 09:45 AM
16 this form of questioning is not reliable.
17 Q. Okay. And what is the next document that
18 you brought with you?
19 A. This is an expert report that I did for
20 the Department of Justice in their case, ongoing 09:45 AM
21 case.
22 Q. Okay. I'll have some questions about that
23 later, but let's skip ahead to the next document.
24 A. Next document is another chapter that is
25 in press by myself and some colleagues titled 09:45 AM
13
1 "Judgment and decision-making. The Dance of Affect 09:45 AM
2 and Reason." And I believe this was another

3 document that was requested by Mr. Leiter.
4 Q. And do you rely on anything in that
5 document for your opinions in this case? 09:45 AM
6 A. This is another version of the document
7 titled "The Affect Heuristic" more of the same. It
8 was written for another publication. It was
9 requested. It covers much of the same ground.
10 Q. Okay. What is next? 09:46 AM
11 A. It looks like Annenberg Survey II, the 14
12 to 22 year old version. And it is the questionnaire
13 that goes with the data disk.
14 Q. Okay. And next?
15 A. It is Annenberg Survey II the 23 and older 09:46 AM
16 version. It also goes with the data disk.
17 Q. That is the questionnaire for the adult
18 sample of Annenberg II?
19 A. That's right.
20 Q. And next? 09:46 AM
21 A. This is a paper titled "Tobacco Industry
22 Summons Polls to the Witness Stand." It's a
23 document written by members of the Gallop
24 Organization.
25 Q. And do you rely on that document for your 09:46 AM
14
1 opinions in this case? 09:46 AM
2 A. Well, it's general background that is
3 relevant to, you know, if the question comes up
4 "Well, don't the polls show that everyone knows the
5 risks of smoking?" This document written by people 09:47 AM
6 in the Gallop Organization tries to counter that
7 view.
8 Q. And in your book "Smoking Risk Perception
9 and Policy" you have in some of the chapters in that
10 book references to some of the Gallop polls on 09:47 AM
11 smoking, do you not? By "you" I'm including the
12 actual authors of the chapters that you edited?
13 A. Well, hopefully.
14 Q. We'll get to it, if you don't recall.
15 A. I don't recall offhand. I would have to 09:47 AM
16 look in the index. It might be, yeah.
17 MR. PIUZE: Dr. Slovic, you are in a
18 unique position here today where these two guys have
19 memorized your book inside out and backwards and
20 forwards.
21 THE WITNESS: They probably remember it
22 better than I do.
23 BY MR. McCARTER:
24 Q. I'll be looking for an autograph later on.
25 What is the next document that you have? 09:47 AM
15
1 A. It's a document from Cliff Bates which 09:48 AM
2 describes two recent studies that he did in the
3 United Kingdom that are sort of replications of or
4 related to work I've done or replications of some of
5 the kinds of things that I've done. 09:48 AM
6 Q. Which of your work that you've done do
7 they replicate?
8 A. They replicate the question about, you
9 know, if you could do it again would you start --
10 would you begin smoking? They use slightly 09:48 AM
11 different wording. They also have comparisons
12 between people's -- smokers' opinion about, you
13 know, when they expect to -- how long it will take

14 them before they stop smoking, quit smoking.
15 And it is also related to -- for those 09:49 AM
16 people who have quit how recently have they quit.
17 So it's kind of a relationship between expectations
18 about how soon they'll stop smoking and what they
19 actually did.
20 It also, the second part of this is a 09:49 AM
21 study titled "The Picture of Misery. The Truth
22 About Smoking" and in smokers' own words which
23 basically takes up the question that I talk about in
24 Chapter 6 of the smoking book which is if you could
25 go back in time when you first began to smoke would 09:49 AM
16
1 you do it again? Again, they ask that question, but 09:49 AM
2 they also asked if a person said no, they followed
3 up and asked why not. So they get kind of a
4 qualitative picture of what kind of underlies this
5 reaction of people who are currently smoking as to 09:50 AM
6 why they wouldn't do that again if they had it to do
7 over again.
8 Q. And when these authors ask similar
9 questions to those that you have asked in previous
10 surveys, do they get similar answers? 09:50 AM
11 A. Almost identical answers.
12 Q. And do you rely on this article for your
13 opinions in this case?
14 A. Yes, I do. I think it shows how the data
15 that I have, say, in this book and the conclusions I 09:50 AM
16 draw are not limited to the specifics of this
17 particular survey, this particular order of
18 questioning, this particular population in the
19 United States. It shows remarkable correspondence
20 to different modes of surveying across the ocean. 09:50 AM
21 Q. Okay. And these materials that you've
22 just gone through along with the file that we have
23 that you gave us, does that represent everything
24 that you've produced to us?
25 A. Let's see. I believe it does, yes. 09:51 AM
17
1 Q. Let's just quickly go through, then, 09:51 AM
2 Exhibit 2 the specific items listed under
3 Paragraph 12. You have brought with you a computer
4 disk and questionnaires for Annenberg Survey II; is
5 that correct? 09:51 AM
6 A. That's correct.
7 Q. And that's all you brought with you
8 regarding Annenberg Survey II?
9 A. That's correct.
10 Q. And letter B below No. 12 references the 09:51 AM
11 survey you conducted of a high school in Oregon that
12 you discuss in your article entitled "Risk
13 perception, personality factors and alcohol use
14 among adolescents." You have not brought anything
15 related to that article, have you? 09:51 AM
16 A. No, I haven't.
17 Q. And why not?
18 A. I don't have that survey instrument. This
19 article although it has a 2001 date, the data were
20 collected around 1989 or '90. I somehow can't 09:51 AM
21 locate that questionnaire. Dr. Hampson is in
22 England and I haven't -- I don't know even if she
23 has the actual survey instrument.
24 Q. Did you look for the survey instrument?

25 A. Yes, I did. Yes, I did. 09:52 AM
18

1 Q. And I take it from your answer that you 09:52 AM
2 didn't contact Dr. Hampson?

3 A. No, I did not contact her.

4 Q. The next thing, letter C is another survey
5 of high school students in Oregon discussed in a 09:52 AM
6 different article entitled "Do Adolescent Smokers
7 Know the Risks."

8 A. I think it's the same survey.

9 Q. It's the same survey?

10 A. Yeah. 09:52 AM

11 Q. Okay. And D is another survey of Oregon
12 students that you -- well, I guess it's the same
13 article, isn't it?

14 A. No, this is 58. The other was high school
15 students. This is the University of Oregon. 09:52 AM

16 Q. I see. Did you bring --

17 A. No, this is the same question which we
18 asked again in the Annenberg II survey in which
19 Bates asked -- this was a much smaller survey and I
20 don't really recall the particulars of it and I 09:53 AM
21 don't know where that data is.

22 Q. Did you look for this data?

23 A. Yes, I did.

24 Q. Did you contact any co-authors to see if
25 they had this data? 09:53 AM
19

1 A. I don't believe there are any co-authors 09:53 AM
2 of this.

3 Q. Let's move on to E. E refers to a survey
4 of 100 students from the University of Oregon and
5 it's in your article entitled "A Psychological Study 09:53 AM
6 of the Inverse Relationship Between Perceived Risk
7 and Perceived Benefits."

8 You didn't bring anything with you related
9 to that survey, did you?

10 A. No, I don't have that data. Dr. Alhakami 09:53 AM
11 is in Saudi Arabia and he may have it there.

12 Q. But you didn't ask him?

13 A. No, I didn't.

14 Q. Okay. Next F is the simple experiment
15 conducted with 49 students from the University of 09:53 AM
16 Oregon. Did you bring anything related to that?

17 A. No, I -- also, that was just a paper and
18 pencil experiment almost identical to the kinds of
19 things that Windschitl did later and it was done
20 with students in a classroom setting and I couldn't 09:54 AM
21 find the papers. It wasn't put on disk or anything.
22 And I don't have that. I couldn't find it.

23 Q. And letter G is a survey of 54 first-year
24 psychology students at the University of Western
25 Australia. You didn't bring anything related to 09:54 AM
20

1 that either? 09:54 AM

2 A. I think that was a computer experiment
3 done by Dr. Finucane in Australia and I don't have
4 that data.

5 Q. Did you look for it? 09:54 AM

6 A. Yeah, I'm certain I don't have it.

7 Q. And H, and you have brought both of those.
8 Those are the articles that you discussed earlier?

9 A. Yes. Yes.

10 MR. McCARTER: Let's mark this as 09:54 AM
11 Exhibit 3.
12 (Defendant's Exhibit 3 was
13 marked for identification and is
14 annexed hereto.)
15 BY MR. McCARTER:
16 Q. Dr. Slovic, will you identify Exhibit 3,
17 please.
18 A. Yeah, this is a printout of the basic
19 first line tabulation from Annenberg Survey II.
20 Most virtually all of the questions except for a 09:55 AM
21 couple of questions based -- I think there are maybe
22 two questions that aren't here.
23 Q. Why aren't those questions there?
24 A. Because I didn't realize when I supplied
25 this that they weren't there. 09:56 AM
21
1 Q. And do you have copies of the data 09:56 AM
2 printouts for those two questions as well?
3 A. I can probably redo them. They would be
4 on the disk. I mean if you just run the disk, you
5 would get that. 09:56 AM
6 Q. And this printout that we marked as
7 Exhibit 3 is something that you provided to us in a
8 different case?
9 A. Yes.
10 Q. When were you first contacted by 09:56 AM
11 plaintiff's counsel in this case?
12 A. I think it was in the fall.
13 Q. The fall of 2000?
14 A. Of 2000, yes.
15 Q. 2001? I'm sorry. 09:56 AM
16 A. 2001, yes.
17 Q. And who contacted you?
18 A. I believe it was Ms. Lawler, Paula Lawler.
19 Q. And did she telephone you?
20 A. Yes. 09:57 AM
21 Q. And what did she say when she called you?
22 A. She said that there was this case and she
23 described it very briefly with some of the essential
24 features of it and asked if I would be interested in
25 providing opinions about it. 09:57 AM
22
1 Q. What central features of the case did she 09:57 AM
2 describe to you, do you recall?
3 A. This was a woman around age 60 who had
4 been smoking since age 17, had developed lung
5 cancer. 09:57 AM
6 Q. Other than with what Ms. Lawler told you
7 about the plaintiff in this case, did you know
8 anything else about the plaintiff?
9 A. Only a few basic details some of which are
10 in the file I just handed over. 09:57 AM
11 Q. Do you recall what basic details?
12 A. Oh, I think that she began smoking by
13 smoking Marlboro and she smoked them and then she
14 switched to another brand.
15 Q. Other than what Ms. Lawler described to 09:58 AM
16 you on the phone when she first called you and what
17 is in the file that you gave us, do you know
18 anything else about the plaintiff?
19 A. Not really. I don't have --
20 Q. And when Ms. Lawler contacted you about 09:58 AM

21 the case, did you express to her the types of
22 opinions you could offer in this case?

23 A. We probably discussed previously the fact
24 that my work was related to the degree to which
25 young people when they begin to smoke really 09:58 AM
23

1 understand the risks of smoking and making informed 09:59 AM
2 choices.

3 Q. Did you express any other opinions that
4 you could offer on this telephone call to
5 Ms. Lawler? 09:59 AM

6 A. No, that was basic basically it.

7 Q. And since that initial call how many times
8 have you spoken with plaintiff's counsel?

9 A. Maybe three or four. Yeah.

10 Q. Do you remember what you discussed during 09:59 AM
11 those conversations?

12 A. Yes. Providing documents. Dates.

13 Q. Anything else?

14 A. Just a brief discussion of, you know, what
15 to bring to the deposition. 10:00 AM

16 Q. Did you discuss anything about your
17 substantive opinions that you could offer in this
18 case?

19 A. I think that counsel knows my opinions. I
20 mean, they have -- you know, they've read some of my 10:00 AM
21 work and I assume that is what they wanted me to
22 testify about.

23 Q. And you have had written communications
24 with plaintiff's counsel; correct?

25 A. Well, I provided -- 10:00 AM
24

1 Q. Are there any written communications that 10:00 AM
2 you've had with plaintiff's counsel that are not in
3 the file that you provided to us earlier this
4 morning?

5 A. No. 10:00 AM

6 Q. And did plaintiff's counsel provide you
7 with any documents other than those that would be in
8 the file that you gave us this morning?

9 A. No. No.

10 Q. How many times have you met with 10:00 AM
11 plaintiff's counsel face-to-face?

12 A. Just this morning.

13 Q. And how long did you meet for?

14 A. We had breakfast.

15 Q. How long did it last? 10:01 AM

16 A. What did we eat?

17 Q. That's next.

18 A. I don't know. 45 minutes, an hour.

19 Q. And what did you guys talk about?

20 A. Our mutual background. Where we -- you 10:01 AM
21 know, where we grew up.

22 Q. Did you talk --

23 A. What schools we went to.

24 Q. Did you talk about anything related to
25 this case? 10:01 AM
25

1 A. Just the general, you know, issues 10:01 AM
2 about -- you know, I kind of mentioned that my
3 intent was to testify about things that are related
4 to my research based on, you know, 40 years of
5 research on judgment and decision-making and risk 10:01 AM

6 perception. And Mr. Piuze said that's fine.
7 Q. Have you ever met or spoken with Betty
8 Bullock?
9 A. No.
10 Q. Have you ever met or spoken with anyone in 10:02 AM
11 her family?
12 A. No.
13 Q. Have you read Ms. Bullock's deposition?
14 A. No.
15 Q. And do you intend to offer any opinions 10:02 AM
16 specific to Betty Bullock?
17 A. What do you mean "specific to Betty
18 Bullock"?
19 Q. Well, something that would talk about why
20 Betty Bullock did what she did or when she started 10:02 AM
21 smoking or any other information that relates to
22 Betty Bullock as opposed to smokers in general?
23 A. Well, I know she started at age 17. So
24 that's something that is not, you know, general
25 across all smokers. 10:02 AM
26
1 Q. And what is that based on, your knowledge 10:02 AM
2 that she started at 17?
3 A. I was told that.
4 Q. By whom?
5 A. I believe Mr. Piuze told me. 10:02 AM
6 Q. Any other basis for that opinion?
7 A. No.
8 Q. Any other opinions specific to Betty
9 Bullock that you intend to offer?
10 A. Well, I understand that she tried to quit 10:03 AM
11 smoking many times without much success.
12 Q. And how do you know that?
13 A. I believe I was told that. It might be in
14 one of the documents that I turned over.
15 Q. Anything else specific that you intend to 10:03 AM
16 say about Betty Bullock?
17 A. No.
18 Q. So you don't intend to testify about why
19 Betty Bullock started smoking; correct?
20 A. Only to the extent that she's a smoker, 10:03 AM
21 you know, and I assume that she has characteristics
22 in common with other smokers who I have studied.
23 Q. You intend to offer the opinion as to why
24 smokers in general start smoking, but not why Ms.
25 Bullock in particular started smoking; is that fair? 10:04 AM
27
1 A. Right. But, you know, I'm assuming that 10:04 AM
2 there is relationship there. But I haven't, as I
3 just indicated, I haven't gone into the specifics
4 about Bullock, her smoking specifically.
5 Q. And you don't intend to testify about what 10:04 AM
6 ads Betty Bullock saw; right?
7 A. I haven't asked her specifically. I
8 haven't seen anything that she's said about what she
9 saw.
10 Q. So you are not intending to offer an 10:04 AM
11 expert opinion about what advertisement she saw?
12 A. No. It may be that others will talk about
13 what advertising was prevalent at the time that she
14 was a young person.
15 Q. But that's not something you will talk 10:05 AM
16 about?

17 A. No, I won't focus on that, no.

18 Q. Besides not focusing on it, you won't

19 offer an expert opinion on that?

20 A. Well, I have a sense of what advertising 10:05 AM

21 was present during the years when she began to

22 smoke, and -- but I haven't studied her directly,

23 you know, what ads she saw directly.

24 Q. And you are not going to offer expert

25 opinion about what if any statements by Philip 10:05 AM

28

1 Morris or another tobacco company Betty Bullock saw? 10:05 AM

2 A. I don't know specifically what she saw.

3 Q. You don't know at all what she saw;

4 correct?

5 A. I don't know. I'll just have to -- I 10:05 AM

6 don't know specifically what she saw, no.

7 Q. And you are not going to offer an expert

8 opinion about why Betty Bullock continued smoking;

9 is that right?

10 A. Well, I have an opinion about why she 10:06 AM

11 continued smoking, but I assume that people who are

12 specialists in addiction will be offering an opinion

13 about that.

14 Q. You are not qualified to offer an opinion

15 that Betty Bullock continued smoking because she was 10:06 AM

16 addicted; is that right?

17 A. Well, I don't know what you mean by not

18 qualified. I have some knowledge of addiction and

19 its properties, but that's not my specialty area,

20 although, I do have some knowledge about it. 10:06 AM

21 I assume there are people testifying in

22 this case who are experts in addiction. I would

23 rather let them evaluate that.

24 Q. And you distinguish between people who are

25 experts in addiction and yourself meaning you are 10:07 AM

29

1 not an expert in addiction; correct? 10:07 AM

2 A. I know something about addiction, but I

3 don't study it as intensively as people who focus on

4 addiction.

5 Q. You are not an expert in addiction? 10:07 AM

6 A. The word expert always is difficult for me

7 to answer. There are people who know more about

8 addiction than I who are on this case.

9 Q. And you don't intend to offer testimony

10 about -- strike that. Let me go on. Because some 10:07 AM

11 of your opinions do relate to addiction; is that

12 correct?

13 A. Yes.

14 Q. And those are opinions related to risk

15 perception of addiction? 10:07 AM

16 A. That's correct.

17 Q. And do you intend to offer any opinions

18 related to addiction above and beyond people's

19 perception of the risks of addiction?

20 A. I think I would rather leave that to 10:08 AM

21 people who specialize in that.

22 Q. You are not going to offer any testimony

23 about what Ms. Bullock knew about the risks of

24 smoking?

25 A. Only as much as it relates to what I 10:08 AM

30

1 believe about what people today know about the risks 10:08 AM

2 of smoking and how that would extrapolate to what
3 people in her era, young people in her time knew
4 about the risks of smoking.

5 Q. With respect to the knowledge of the risks 10:08 AM
6 of smoking, you will talk about smokers in general,
7 not Betty Bullock in particular; right?

8 A. That's correct.

9 Q. And you mentioned that you will talk about
10 what people know today about the risks of smoking, 10:08 AM
11 extrapolate backwards to people in her era. How do
12 the people's perception of the risks of smoking
13 today extrapolate backwards to the time period when
14 Betty Bullock smoked or started smoking?

15 A. I believe that people know relatively more 10:09 AM
16 about the risks of smoking today than they did 40 or
17 more years ago.

18 Q. What do people know today that people
19 didn't know 40 years ago?

20 A. They are more aware of the linkage -- I'm 10:09 AM
21 sorry -- the relationship between smoking and, you
22 know, health.

23 I think the term addiction is more
24 familiar to them.

25 Q. Anything else? 10:09 AM
31

1 A. I think there probably have -- today there 10:10 AM
2 is certainly in the air anti-smoking messages and
3 commercials that weren't present 40 years ago.

4 Q. Okay. The first thing you mentioned was
5 that smokers today are more aware of the linkage 10:10 AM
6 between smoking and ill health. On what do you base
7 that opinion?

8 A. There are -- if you look at surveys which
9 asks people, you know, is there a relationship
10 between smoking and lung cancer, something like 10:10 AM
11 that, the percentage of people have said, yes, agree
12 with that statement has increased considerably over
13 time. It was much lower in the '50s and '60s than
14 it is today.

15 Q. Are you referring to Gallop polls on that 10:11 AM
16 issue?

17 A. Gallop polls would be one example.

18 Q. Are there Roper polls?

19 A. Possibly, yes, particularly the Gallop
20 polls. 10:11 AM

21 Q. Any other survey you have in mind?

22 A. Those are the main ones.

23 Q. Is there any thing else that forms the
24 basis for your opinion that smokers are more aware
25 today of the linkage between smoking and ill-health 10:11 AM
32

1 than smokers were 40 years ago? 10:11 AM

2 A. Well, if you look at what information is
3 in the -- you know, was in the air, what was in the
4 media and just, you know, what information was
5 available, there is clearly more information today 10:11 AM
6 than, you know, floating around than there was 40
7 years ago.

8 Q. You do not intend, do you, to offer an
9 expert opinion as to whether Betty Bullock had
10 positive feelings about smoking, do you? 10:12 AM

11 A. I have no direct data on that. Yeah.

12 Q. Okay. So the answer is yes, you do not

13 intend to offer an opinion on that subject?
14 A. Well, I think that to the extent that most
15 people when they try smoking they have to be 10:12 AM
16 motivated by something. So the question is, you
17 know, what is motivating them to take that first
18 cigarette?
19 Q. Let me just interject here. You will
20 testify about feelings that smokers in general have 10:13 AM
21 about smoking, but not feelings that Betty Bullock
22 in particular had about smoking; is that correct?
23 A. I guess I'm having trouble deciding how
24 the general and the particular relate. I mean, if
25 something is kind of fundamental to human behavior 10:13 AM
33
1 and to the way to what we know about the psychology 10:13 AM
2 of human motivation in terms of questions like, you
3 know, approach, avoidance, behavior and the degree
4 to which virtually all approach behavior is linked
5 to, you know, positive beliefs or positive affect, 10:13 AM
6 then, I think we can say that that would apply to
7 Betty Bullock as well.
8 Q. Not everyone who smokes has positive
9 affect with respect to smoking, would you agree with
10 that? 10:14 AM
11 A. Well, that's what our data show, that once
12 they start smoking after they've been smoking they
13 have criteria of negative affect towards it. But I
14 thought you were talking about the initiation of
15 smoking. 10:14 AM
16 Q. Well, not everybody has positive affect
17 about smoking before they start smoking; correct?
18 Let me rephrase that. It's not
19 necessarily true that everybody has positive affect
20 about smoking before they start smoking? 10:14 AM
21 A. Again, it would boil down to what goes
22 into the category of positive affect. I mean,
23 sometimes people may do it because they are curious.
24 Is curiosity a positive component or not? So, I
25 mean, there are kind of shades of factors that are 10:14 AM
34
1 motivating that I think, you know, to me are 10:14 AM
2 positive, but we can discuss that.
3 Q. But you don't know what factors motivated
4 Betty Bullock to start smoking; correct?
5 A. I would assume it was something positive 10:15 AM
6 or intriguing or interesting.
7 Q. But that's just your assumption --
8 A. But I'm assuming that based on what I know
9 about human motivation.
10 MR. McCARTER: Okay. I'm going to mark -- 10:15 AM
11 let's see if I can find it. Let me give you
12 something else that I think either you or Mr. Piuze
13 gave us this morning and ask you to identify it for
14 us.
15 MR. PIUZE: I gave it. 10:15 AM
16 MR. McCARTER: Mr. Piuze gave it.
17 MR. PIUZE: So it should be me that does
18 the identifying. It's the testimony of Mr. Ferry
19 from Bowgan versus Philip Morris.
20 In earlier questioning you asked this 10:16 AM
21 witness about stuff he reviewed or intends to
22 review. It's possible that he may review that. And
23 so I provided it this morning out of an abundance of

24 caution.
25 BY MR. McCARTER:

35

1 Q. And, Dr. Slovic, is that something that 10:16 AM
2 you have seen before?
3 A. No, it's not.
4 Q. Okay. You can hand that back to me.
5 Thank you. 10:16 AM
6 I'm going to mark this. I think we're on
7 No. 4.
8 (Defendant's Exhibit 4 was
9 marked for identification and is
10 annexed hereto.) 10:16 AM
11 BY MR. McCARTER:
12 Q. Dr. Slovic, you identified this earlier
13 when you were discussing documents that either you
14 or Mr. Piuze brought here for us, can you identify
15 it again? It's Exhibit 4 now. 10:16 AM
16 A. It's an expert report.
17 Q. Okay. It's an expert report that you
18 prepared for the federal government's case against
19 the tobacco companies; is that correct?
20 A. That's correct. 10:17 AM
21 Q. Now, does this expert report contain all
22 of the opinions that you intend to offer in this
23 case?
24 A. I think basically it does. It covers a
25 wide variety of topics and issues. 10:17 AM

36

1 Q. Okay. Can you think of any opinions that 10:17 AM
2 you intend to offer that are not disclosed in this
3 report?
4 A. No, I can't.
5 Q. Okay. Now, the flip side of that, are 10:17 AM
6 there any opinions in this report that you do not
7 intend to offer in this case?
8 A. Well, I haven't written a report for this
9 case. And I don't know, you know, which of these
10 points I specifically would be called upon to give 10:18 AM
11 an opinion about. But so I find it a little hard to
12 answer that question.
13 Q. I thought I would try.
14 A. Yeah.
15 Q. Can you flip to Paragraph 7, I think, 10:18 AM
16 which is on Page 3?
17 A. Okay.
18 Q. Let me find what I'm looking for.
19 Actually, the spill over I want to look at on
20 Page 4. You talk about overwhelming regret 10:18 AM
21 associated with the decision to smoke.
22 Do you see that?
23 A. Yes.
24 Q. Do you remember in your deposition in the
25 federal case with Mr. Mitten he was asking you about 10:18 AM

37

1 whether you actually had a basis for saying that 10:19 AM
2 smokers regret their decision to smoke?
3 A. Yes.
4 Q. And do you remember saying that regret is
5 probably not the best word to characterize the 10:19 AM
6 evidence that you have?
7 A. Yes.
8 Q. And you thought a better description would

9 be that smokers are disappointed in their decision
10 to smoke? 10:19 AM

11 A. Dissatisfied.

12 Q. Dissatisfied. I'm sorry. And would you
13 agree that you don't really have a basis for saying
14 that smokers regret their decision to start smoking
15 as opposed to being dissatisfied with that decision? 10:19 AM

16 A. I think smokers have a lot of negative
17 feelings about what they are doing. And I think
18 some -- I think dissatisfaction is certainly a
19 dominant feeling. There are probably -- there is
20 probably a certain amount of regret. I said the 10:19 AM
21 overwhelming regret. I think for some people it is
22 overwhelming regret. Other people it would be more
23 dissatisfaction. I mean, these are shades of
24 meaning that would have to be derived from the kind
25 of material that we have here in the study by Bates 10:20 AM

1 in what he calls The Picture of Misery. 38
2 So we have to kind of -- if you look at 10:20 AM
3 those categories, you know, whether you want to use
4 the word "regret" or "dissatisfaction" or some other
5 word, I think it's just a matter of interpretation. 10:20 AM

6 Q. Now, in Exhibit 4, your federal government
7 report, you cite tobacco company documents in there;
8 is that right?

9 A. Yes. Um-hum.

10 Q. And all of the documents cited in that 10:20 AM
11 report were supplied to you by the Department of
12 Justice?

13 A. That's correct.

14 Q. And the Department of Justice lawyers are
15 the ones who represent the United States in its 10:20 AM
16 lawsuit against the tobacco companies?

17 A. That's correct.

18 Q. Are you relying on those documents for
19 your opinions in this case?

20 A. Only in the way I rely on them here as 10:20 AM
21 sort of remarkable confirmation of the kind of ideas
22 that have come out in recent years from completely
23 different volume of work. I mean, there are
24 research that I and others have done about what
25 motivates people and what they understand and so 10:21 AM

1 forth was done, you know, without awareness of any 39
2 of this. 10:21 AM

3 I mean, a lot of this material was done 30
4 or 40 years ago by market research types and I think
5 it's -- you know, when I looked at this material I 10:21 AM
6 was surprised and kind of stunned by the degree to
7 which they sort of -- they had this story long
8 before I did, certainly. And in that sense, I think
9 it's quite informative. Even though they are
10 obviously questions about -- I mean, this was given 10:22 AM
11 to me by the Department of Justice and so forth.

12 In concert with that they've gone through
13 then other depositions and, you know, I don't know
14 to what extent this is a representative or random
15 sample of what is out there or not, but it's sort 10:22 AM
16 of, I think, remarkable the degree to which the
17 elements of today's story that comes out of research
18 is in the marketing documents that I was shown.

19 Q. And do those documents that you've seen

20 reference studies that tobacco companies or somebody 10:22 AM
 21 working on behalf of tobacco companies undertook to
 22 estimate the impact of cigarette advertising on
 23 people's smoking decisions?
 24 A. Yes, they represent studies that were done
 25 to try to understand what images and ideas, 10:22 AM
 40
 1 concepts, pictures, displays would appeal to various 10:23 AM
 2 target audiences.
 3 Q. Have you done any -- made any effort to
 4 check whether the studies referenced in these
 5 documents are valid and reliable studies? 10:23 AM
 6 A. I have not checked every one. I mean, you
 7 can find some of these things -- I poked around a
 8 little bit and seen that if I go to one of the
 9 specific web sites, like a Philip Morris web site,
 10 you know, you can find these some of these documents 10:23 AM
 11 on the web sites that the companies are maintaining.
 12 You know, a few of the documents are referred to by
 13 David Kessler in his book "A Question of Intent."
 14 And, you know, so that is the kind of checking I've
 15 done. 10:24 AM
 16 Q. Okay. The documents themselves reference
 17 certain studies; right?
 18 A. Yes.
 19 Q. And have you checked the underlying
 20 studies that they are referencing to see if those 10:24 AM
 21 studies are valid and reliable?
 22 A. Well, some of these are reports from firms
 23 that have conducted focus groups, for example, or
 24 small surveys and are presenting their results and
 25 their interpretation of these surveys. 10:24 AM
 41
 1 So it's kind of -- I think in a sense they 10:24 AM
 2 are like primary documents for some of this
 3 material.
 4 Q. And the documents that are not primary
 5 documents, have you checked any of the underlying 10:24 AM
 6 studies to see if they are valid or reliable?
 7 A. Sometimes they may be referring to a Roper
 8 or Gallop poll. I mean, sometimes some of these
 9 documents are based on speeches that someone in the
 10 industry is giving to another industry group. So I 10:25 AM
 11 haven't checked the underlying basis on which they
 12 were making these assertions. I think what is
 13 important is they were making these assertions and
 14 this is what they believed.
 15 Q. Now, have you reviewed any other tobacco 10:25 AM
 16 company documents other than the ones that you cite
 17 in your federal report, Exhibit 4?
 18 A. Well, I was given a box of documents and I
 19 didn't cite every one of them.
 20 Q. Okay. The ones that you didn't cite are 10:25 AM
 21 you relying on them at all for your opinions in this
 22 case?
 23 A. No.
 24 Q. Are you relying on any other documents
 25 besides those cited in your federal report which is 10:25 AM
 42
 1 Exhibit 4 for your opinions in this case? 10:25 AM
 2 A. Only the additional ones that I've
 3 supplied like the Windschitl or the Bates.
 4 Q. I'm sorry. I didn't ask my question

5 precisely enough. 10:26 AM
6 A. Right.
7 Q. Are you relying on any tobacco company
8 documents other than those cited in Exhibit 4 for
9 your opinions in this case?
10 A. No. 10:26 AM
11 Q. Now, is it true that you haven't conducted
12 your own systematic search for tobacco company
13 documents?
14 A. That's true.
15 Q. And as part of your work in this case, 10:26 AM
16 have you reviewed any tobacco company
17 advertisements?
18 A. For this case specifically?
19 Q. Yes.
20 A. No, I haven't. 10:26 AM
21 Q. Okay. How about for any other case
22 involving tobacco litigation, have you reviewed any
23 tobacco advertisements?
24 A. Yes.
25 Q. Okay. How did you obtain those 10:26 AM
43
1 advertisements? 10:26 AM
2 A. I was provided them.
3 Q. Provided them by who?
4 A. Provided by attorneys for the plaintiffs.
5 Q. Is there anywhere -- 10:27 AM
6 A. Excuse me. I'm sorry. Maybe we can go
7 back to your question, again. I might have misheard
8 it.
9 MR. McCARTER: Perhaps you could reread
10 it.
11
12 (The record was read by the
13 court reporter as follows:
14 "Q. How about for any other
15 case involving tobacco litigation, 10:26 AM
16 have you reviewed any tobacco
17 advertisements?")
18 THE WITNESS: I think as part of the
19 documents that were sent me by Department of Justice
20 there was quite a large packet of advertisements, 10:27 AM
21 tobacco advertising.
22 BY MR. McCARTER:
23 Q. Is there any way you can identify for us
24 which tobacco company advertisements you've
25 reviewed? 10:28 AM
44
1 A. I think they were diverse. They covered a 10:28 AM
2 lot of brands and I don't know the time period.
3 Q. If I wanted to know what particular
4 advertisements you actually looked at, how would I
5 go about obtaining that information if it's at all 10:28 AM
6 possible for me to do so.
7 A. I mean, I could send you some, some ads.
8 Q. You have --
9 A. I have --
10 Q. Let me finish my question. You have ads, 10:28 AM
11 you are in possession of ads, some of the ads at
12 least that you have reviewed?
13 A. Yeah, I think you'll find them very
14 familiar.
15 Q. Is there anywhere in an expert report or 10:28 AM

16 some other document that you have where you have a
17 listing of the ads that you've reviewed?

18 A. No.

19 Q. You've been an expert in other cases
20 besides this one against the tobacco companies; is 10:29 AM
21 that right?

22 A. Yes.

23 Q. And how many cases have you been hired by
24 somebody suing a tobacco company?

25 A. I don't know exactly. It might be five or 10:29 AM
45

1 six. 10:29 AM

2 Q. And did you give either -- did you give
3 deposition testimony in all of the cases in which
4 you've been hired by somebody suing a tobacco
5 company? 10:29 AM

6 A. Yes.

7 Q. Have you ever attended any tobacco
8 litigation conferences or seminars?

9 A. Tobacco litigation conferences?

10 Q. Right. 10:29 AM

11 A. No.

12 Q. How much are you being paid for your time
13 in this case?

14 A. \$400 an hour.

15 Q. You charge a higher or lower rate or the 10:29 AM
16 same rate for testimony that you give?

17 A. The same.

18 Q. And how many hours have you spent prior to
19 this deposition on the case? Was it one hour? Was
20 that your best estimate? 10:30 AM

21 A. One hour.

22 Q. Was that your breakfast meeting with
23 Mr. Piuze?

24 A. Yes.

25 Q. And have you always charged 400 an hour 10:30 AM
46

1 for your work in tobacco cases? 10:30 AM

2 A. No.

3 Q. How has your rate changed over time?

4 A. Well, the first case I was involved in was
5 the FTC case against Joe Camel. And my rate was -- 10:30 AM
6 they said that rate was \$50 an hour. I worked for
7 \$50 an hour.

8 Q. And how much time did you spend in that
9 case?

10 A. I can't remember. 10:30 AM

11 Q. Do you have a ballpark?

12 A. I'm just guessing, 40 hours.

13 Q. And what about the next case that you
14 worked on, how much did you charge in that case?

15 A. I can't remember. It might have been 2 or 10:31 AM
16 \$300.

17 Q. Do you recall what the name of that case
18 was? Was it Simon?

19 A. I believe it was for the State of
20 Massachusetts. It was part of the -- one of the 10:31 AM
21 state suits.

22 Q. And you actually were not deposed in that
23 case, were you?

24 A. It's possible I wasn't deposed in that
25 one. 10:31 AM
47

1 Q. Do you know how many hours you spent 10:31 AM
2 working on that case total?
3 A. No.
4 Q. Ballpark estimate?
5 A. That was when? 1998? I don't know maybe 10:31 AM
6 30 or 40.
7 Q. Okay. Let's move on. What was the next
8 case after the State of Massachusetts that you
9 worked on? Let me try to help you with names if
10 that helps. I know you testified -- 10:32 AM
11 A. I could give you some names, you know --
12 Q. They don't have to be in order.
13 A. Simon. And I think maybe Mann.
14 Q. Let's talk about Simon. Do you remember
15 how much you charged in that cases? 10:32 AM
16 A. I don't. No. It might have been \$200,
17 \$300, 4. I don't remember.
18 Q. Do you remember how much time you spent
19 working on that case?
20 A. No, I don't. 10:32 AM
21 Q. Ballpark?
22 A. I really -- it would be a wild guess. I
23 don't know. I mean, it's -- none of these cases did
24 I spend a huge amount of time working on.
25 Q. What about the Mann case, same thing about 10:32 AM
48
1 200, 300 -- 10:32 AM
2 A. I can't remember the specifics.
3 Q. You have to wait for me to finish my
4 question.
5 A. Sorry. 10:32 AM
6 Q. In the Mann case would you estimate your
7 rate -- that was about the same time of the Simon
8 case, wasn't it?
9 A. Yes. Uh-huh.
10 Q. And would you estimate that your rate was 10:33 AM
11 between 200 to \$300 an hour?
12 A. Probably.
13 Q. Okay. And more recently you have been
14 retained in the United States case against Philip
15 Morris; is that right? 10:33 AM
16 A. Yes. Um-hum.
17 Q. And what rate do you charge in that case?
18 A. \$300 an hour.
19 Q. And how much time have you spent working
20 on that case? 10:33 AM
21 A. Just guessing maybe 80 hours.
22 Q. You were also involved in the Daniels
23 case?
24 A. Yes.
25 Q. And what is your rate in that case? 10:33 AM
49
1 A. \$400. 10:33 AM
2 Q. Do you offer a government discount?
3 A. Yes.
4 Q. And how much time have you spent on the
5 Daniels case? 10:33 AM
6 A. Well, 14 hours of deposition and prior to
7 that -- oh, I don't know I read some transcripts and
8 things, some other depositions. It might have been,
9 again, guessing 16 hours.
10 Q. Now, who gets the money that you get paid 10:34 AM
11 for your work on tobacco cases, is it you or your

12 company?
13 A. I do.
14 Q. None of the money goes to your company?
15 A. No. 10:34 AM
16 Q. What is your -- what salary do you
17 currently draw from Decision Research?
18 A. What is my annual salary?
19 Q. Yes.
20 A. I'm just -- I think it's about -- I don't 10:35 AM
21 know. \$110,000 a year.
22 Q. And has that changed over the past five
23 years?
24 A. In terms of my salary?
25 Q. Yes. I'm assuming it hasn't gone down. 10:35 AM
50
1 A. It's probably gone up a little bit. 10:35 AM
2 Q. Do you have an estimate as to what it was
3 five years ago?
4 A. No. 90 something.
5 Q. And you also teach at the University of 10:35 AM
6 Oregon?
7 A. Sometimes.
8 Q. And what do you draw a year from that job?
9 A. I've been on leave for nine years from
10 teaching. So I work for free for the University of 10:35 AM
11 Oregon.
12 Q. How are you doing there? Do you need a
13 break?
14 A. No. Just some water.
15 Q. Sure. As Mr. Piuze suspected earlier, I 10:36 AM
16 have gone through a lot of your prior depositions
17 and to try to streamline things I just want to
18 follow-up on some things you said in those
19 depositions to see if your answers then are still
20 accurate now. 10:36 AM
21 A. Okay.
22 Q. When I try to characterize something you
23 said in a prior deposition, I'm doing my best to be
24 accurate, but if it doesn't square with your
25 recollection, I have portions of the transcript here 10:36 AM
51
1 which I'm more than happy to show you. So just ask 10:36 AM
2 if you need to do it.
3 In your deposition this March in the
4 federal government's case you testified that you had
5 not made any scientific attempt to associate any 10:36 AM
6 level of optimism bias in smokers with anything that
7 Philip Morris or any other tobacco company has said
8 or done. Is that still true?
9 A. What do you mean by scientific attempt?
10 Q. Well, I can show you the deposition and -- 10:37 AM
11 A. Sure.
12 Q. -- and you can tell me what you interpret
13 it to be. Let me make sure I have the right page. I
14 have highlighted it for you.
15 A. Okay. 10:37 AM
16 Q. I guess you can first tell me what you
17 understood the term "scientifically associate" in
18 that question to mean?
19 A. Are you -- I'm looking at the yellow
20 stuff? 10:38 AM
21 Q. Yes, that is what I have in mind.
22 A. Yes.

23 Q. Let me read it, for the record.
 24 It says:
 25 "Q. Have you made any attempt to 10:38 AM
 52
 1 scientifically associate any level 10:38 AM
 2 of optimism bias in cigarette
 3 smokers with anything that
 4 defendants may have said or done?
 5 "A. Not in terms of a direct 10:38 AM
 6 correlative study."
 7 A. That's not what is in the yellow.
 8 Q. I'm sorry. I read the wrong part.
 9 A. Do you want me to read the yellow or the
 10 other? 10:38 AM
 11 Q. I was going to read the other, but I
 12 didn't have it. The yellow says:
 13 "Q. And just so we are clear, you
 14 did not make any attempt in
 15 connection with your opinions that 10:38 AM
 16 you developed in this case to
 17 analyze the Annenberg data for
 18 evidence of the presence of or
 19 absence of optimism bias" --
 20 THE REPORTER: Whoa. Absence of?
 21 MR. PIUZE: Talk faster because you are
 22 not challenging the court reporter. She's only at
 23 97 percent capacity.
 24 BY MR. McCARTER:
 25 Q. Let me read it again. 10:38 AM
 53
 1 "Q. And just so we are clear, you 10:38 AM
 2 did not make any attempt in
 3 connection with your opinions that
 4 you developed in this case to
 5 analyze the Annenberg data for 10:38 AM
 6 evidence of the presence or
 7 absence of optimism bias among
 8 smokers; correct?
 9 "A. I wasn't focused on that
 10 because I assumed Weinstein would 10:39 AM
 11 look at those kinds of issues."
 12 Now, is it still true that you have not
 13 made any attempt to analyze Annenberg data for
 14 evidence of the presence or absence of optimism bias
 15 among smokers? 10:39 AM
 16 A. I mean, there is clear evidence in
 17 Annenberg data for evidence of optimism bias. It's
 18 in there. Some of it is reported in Chapter 6. I
 19 mean, it's there. And there is also evidence for
 20 optimism bias from a lot of different directions and 10:39 AM
 21 studies and the kinds of things that Weinstein
 22 discusses. He has a chapter in this book that gets
 23 into some of that.
 24 So I mean, that is in the background of
 25 what I know about smokers and how they view what 10:40 AM
 54
 1 they are doing. So I mean, I can't kind of 10:40 AM
 2 disassociate -- there are certainly data in
 3 Annenberg that relate to optimism and there is data
 4 from all other directions.
 5 The Bates stuff that I gave that one he 10:40 AM
 6 calls The Delusion Gap is incredible documentation
 7 with the type of optimism with regard to you're

8 thinking about addiction. So it's there. I haven't
9 done any further studies or analyses, if that is
10 what you are asking. 10:40 AM

11 Q. Have you, yourself, analyzed the Annenberg
12 data to see whether or not there is evidence of
13 optimism bias in that data?

14 A. I mean, it leaps out, the data. You don't
15 -- it's just there in the -- in some of the tables. 10:41 AM
16 For example, you know, when do you -- do you plan to
17 quit? Yes. When do you plan to quit? You know,
18 next six months. And it doesn't matter.
19 Independent of how many times they've tried to quit
20 in the past. They are -- people are -- smokers are 10:41 AM
21 always expecting that they are going to quit and
22 they are going to quit soon.

23 I mean, that is a form. That is very
24 powerful optimism. That is a good thing, too. It
25 keeps motivating people to try to quit. So it's 10:41 AM
55

1 kind of fundamental. It goes beyond just smoking. 10:41 AM
2 This is kind of fundamental to optimism is a great
3 quality in human beings that it gets us to do all
4 kinds of things that are often mostly it could be
5 good for us. 10:42 AM

6 Q. Have you -- other than looking at the
7 tables that other people have created using the
8 Annenberg data, have you, yourself, looked at the
9 underlying data to estimate or analyze whether
10 optimism bias was evident in that data? 10:42 AM

11 A. Well, I think optimism bias is clearly
12 evident in the data and it's -- you know, in terms
13 of analyzing it, it's just kind of looking at the
14 answers and it's just there. I haven't done any
15 calculations and said well, it's 85 percent or 62 10:42 AM
16 percent or whatever. I haven't done -- I haven't
17 put any numbers on it.

18 Q. Have you looked at -- other than what is
19 presented in your tables in your smoking book, have
20 you seen the answers to any other questions in the 10:42 AM
21 Annenberg surveys that relate to optimism bias?

22 A. I think there are questions there about
23 whether you smoke more or less than the average
24 person or your cigarettes have more or less or are
25 safer than others. There are a variety of questions 10:43 AM
56

1 there that Neil Weinstein placed into the survey 10:43 AM
2 because he was interested in them that really
3 relate. And I think most of them show some form of
4 optimism bias, but I haven't -- I haven't done a
5 specific analysis of that. 10:43 AM

6 Q. Let me move on here. In January in the
7 Daniels case you testified that you -- let me give
8 you this so you can see it. I'll switch with you.
9 You testified that you weren't aware of any
10 experimental studies that show a cause and effect 10:44 AM
11 relationship between optimism bias and risk-taking
12 behavior. Do you see that?

13 A. Um-hum.

14 Q. And is that still true?

15 A. Yeah, I can't think of specific studies. 10:44 AM
16 Again, the question is what is optimism bias? How
17 do you measure it? There is a lot of studies about
18 perception of risk and risk taking. And some of

19 those might be interpreted as -- you know, in those
20 studies ways in which information is presented to 10:45 AM
21 people is varied. You know, it might be that there
22 are some studies out there that have experimentally
23 done things that could be viewed in this light, but
24 I'm not real familiar off the top of my head with
25 those studies and I'm not relying on those. 10:45 AM
57

1 Q. If those studies do, in fact, exist you 10:45 AM
2 are not aware of any particular study on that?

3 A. No. My guess is I could go in the
4 literature and find some, but I haven't done that.

5 Q. Now, are experimental studies the only 10:45 AM
6 type of studies that can establish a cause and
7 effect relationship?

8 A. It depends what you mean by cause and
9 effect, causal relationship. For example,
10 epidemiology studies are not experimental studies. 10:46 AM
11 And they have procedures and ways of evaluating
12 evidence that are linked to causality.

13 I think someone named Bradford Hill who
14 has nine things to look for in epidemiological study
15 to try to establish a causal link between exposure 10:46 AM
16 and some other outcome.

17 Q. So there are -- in your opinion, there are
18 other studies besides experimental studies that can
19 establish a cause and effect relationship?

20 A. Yes. 10:46 AM

21 Q. And what -- if you wouldn't categorize
22 those as experimental studies, what would you
23 categorize those studies as?

24 A. Well, those are, for example,
25 epidemiological studies or types of correlational 10:47 AM
58

1 studies. 10:47 AM

2 Q. Those correlational studies using
3 longitudinal data?

4 A. Not necessarily longitudinal.
5 Longitudinal data is good if you've got it, but it's 10:47 AM
6 not the -- it's not absolutely necessary.

7 Q. Is it true that setting aside the issue of
8 experimental studies, is it true that you know of no
9 study that establishes a cause and effect
10 relationship between optimism bias and smoking? 10:47 AM

11 A. I think, for example, the information
12 about people's expectations about how long they are
13 going to be smoking and the ease of quitting show a
14 strong relationship between what could be called
15 optimism bias in that regard and smoking. 10:48 AM

16 Q. And those correlations that you are
17 speaking to come out of cross-sectional data; right?

18 A. Yes, but they are then corroborated by
19 statements that smokers make about what has happened
20 to them. What their thoughts were, so forth. 10:49 AM

21 Q. What statements by smokers are you
22 referring to here?

23 A. I didn't realize how hard it would be to
24 quit smoking. I didn't expect to be smoking very
25 long when I started. Those sorts of statements. 10:49 AM
59

1 Q. Can you just give me a definition of -- I 10:49 AM
2 mentioned cross-sectional data. Let's try to define
3 the term. What is your definition of

4 cross-sectional data?
5 A. Data that goes across different people 10:50 AM
6 where you compare one group of persons to another.
7 Q. Is it data that is collected at one point
8 in time?
9 A. Not necessarily.
10 Q. When is cross-sectional data not collected 10:50 AM
11 at one point in time?
12 A. Well, you can compare one group of people
13 at one time and another group of people at another
14 time.
15 Q. That's by comparing two different data 10:50 AM
16 sets; right?
17 A. Yes.
18 Q. But each particular data set in that
19 example would be cross-sectional data that is taken
20 at one point in time? 10:50 AM
21 A. Well, I don't know how -- how broad one
22 point might mean. I mean a study can be done over
23 several months. That is what you mean by one point,
24 I think.
25 Q. Right. 10:51 AM
60
1 A. I don't quite understand quite what the 10:51 AM
2 question is.
3 Q. Can you tell me what the difference is
4 between cross-sectional data and longitudinal data?
5 A. I think longitudinal is usually when you 10:51 AM
6 take the same individuals and follow them across
7 time.
8 Q. And how does that contrast with
9 cross-sectional data?
10 A. Well, cross-sectional is usually not the 10:51 AM
11 same people.
12 Q. Okay. Let me see that back there.
13 A. Sure.
14 Q. There is another segment I want to ask you
15 about. Make sure I have it in here. Okay. This is 10:51 AM
16 from the Daniels deposition this past January.
17 There you testified that you were not going to offer
18 an expert opinion that tobacco companies intended to
19 convince youth to start smoking.
20 Do you see that? 10:52 AM
21 A. Yes.
22 Q. And in this case do you intend to offer an
23 expert opinion that Philip Morris or another tobacco
24 company intended to convince youth to begin smoking?
25 A. I have an opinion about intent. If I'm 10:52 AM
61
1 asked that opinion, I would give that. But I assume 10:52 AM
2 that there will be evidence presented from a variety
3 of different perspectives about, you know, what the
4 actions of the tobacco companies were. And I think
5 it's appropriate for the jury and the judge to 10:52 AM
6 interpret that information with regard to intent.
7 Q. Thanks. Okay. I have another deposition
8 for you, bring back some fond memories. This is
9 from the R.J.R. Joe Camel case before the FTC.
10 In that deposition you testified that you 10:53 AM
11 would not offer an expert opinion that cigarette
12 advertising causes kids to start smoking.
13 A. Yes, I said that.
14 Q. Okay. And do you intend to offer an

15 opinion in this case that cigarette advertising 10:53 AM
 16 causes kids to start smoking?

17 A. I believe it does, yes.

18 Q. And in this testimony in the R.J.R. case
 19 you stated that this area whether cigarette
 20 advertising causes kids to start smoking is not 10:54 AM
 21 really your direct area of expertise. Have you done
 22 something since then to gather expertise in this
 23 field?

24 A. Yes.

25 Q. Okay. What have you done? 10:54 AM
 62

1 A. I spent four years studying the influence 10:54 AM
 2 of imagery and affects on human behavior.

3 Q. Anything else? I know that is a broad
 4 area, but anything other than that?

5 A. Well, I've read materials from advertisers 10:54 AM
 6 and marketers about their use of imagery and affect,
 7 you know, to -- in advertising and marketing. I've
 8 seen in the tobacco industry documents, the
 9 statements that they make about the importance of
 10 imagery and affect in marketing and promoting of 10:55 AM
 11 tobacco products.

12 Q. Okay. Thanks. Since your deposition in
 13 the Simon case have you done anything to test the
 14 effect of cigarette advertising on consumer
 15 perceptions of the risks of smoking? 10:55 AM

16 A. I haven't tested that directly, no.

17 Q. Have you tested it indirectly?

18 A. Would you repeat the question, please.

19 Q. Sure. Would you mind reading it back?
 20 (The record was read by the court
 21 reporter as follows:
 22 "Q. Since your deposition in
 23 the Simon case have you done
 24 anything to test the effect of
 25 cigarette advertising on consumer 10:55 AM
 63

1 perceptions of the risks of 10:55 AM
 2 smoking?

3 A. I haven't tested that
 4 directly, no.

5 Q. Have you tested it 10:55 AM
 6 indirectly?"

7 THE WITNESS: Advertising on the
 8 perceptions of risk? No, I haven't tested it
 9 directly.

10 BY MR. McCARTER:

11 Q. Now, since your deposition in the Mann
 12 case have you measured and compared the public's
 13 exposure to cigarette advertising to the public's
 14 exposure to anti-smoking messages.

15 A. No, I haven't. 10:56 AM

16 MR. McCARTER: Why don't we take a break
 17 now.

18 (Recess taken.)

19 BY MR. McCARTER:

20 Q. Back on. I just want to follow up, 11:04 AM
 21 Dr. Slovic, on a couple of things I asked you about
 22 earlier. You brought with you that new article you
 23 have "The Affect Heuristic"?

24 A. Yes.

25 Q. Did that study involve any surveys other 11:04 AM

1 than the Annenberg surveys? 11:04 AM
2 A. "The Affect Heuristic" is a review, kind
3 of a theoretical and review article of, you know,
4 basic principles of human thinking. And it draws on
5 material from many different places. I mean, the -- 11:05 AM
6 it looks at what we call analytic versus
7 experiential thinking. Those are kind of the two
8 fundamental modes of human thinking.
9 And it tries to provide evidence of the
10 interplay between these two systems. And at the 11:05 AM
11 back of this, as I recall, there is -- we use some
12 of the tobacco stuff as an illustration of
13 experiential thinking.
14 But the article itself draws on 50, 60, 70
15 studies which are themselves only a small fraction 11:05 AM
16 of the scientific literature on this topic.
17 Q. But you didn't go out and conduct any new
18 survey for purposes of that article?
19 A. No, because that article was pulling
20 together, but it's based on a lot of experimental 11:06 AM
21 work by myself and others.
22 Q. I want to go back to Exhibit 2, which I
23 believe is the notice of your deposition in this
24 case.
25 A. Here it is. 11:06 AM

1 Q. On Page 4 of that exhibit below letter A 11:06 AM
2 between Letters B and G it lists a bunch of surveys
3 that you or somebody else you've worked with have
4 done in the past. Do you rely on any of those
5 surveys for your opinions in this case? 11:06 AM
6 A. You mean B, C, D and E and F?
7 Q. And G?
8 A. And G. Well, B and C is an older study of
9 high school students in Oregon and it's only -- I
10 mean, it has relevant data on people's perceptions 11:07 AM
11 of risk, but I really don't rely on -- that's kind
12 of a general study of risk perception in adolescents
13 on a variety of things and I'm not really relying on
14 that.
15 Q. Are you relying on any of the surveys 11:07 AM
16 mentioned in Letters B through and including G?
17 A. That was B and C. I'm not really relying
18 on that data.
19 Q. Okay. What about the other ones?
20 A. D, E -- D is the, you know, the first time 11:08 AM
21 we did this I tried this if you could go back in
22 time, and I did it with some Oregon students, and
23 that's the same question that was asked in Annenberg
24 II, it's the same question that Bates asked. I
25 mean, I rely on Annenberg II and Bates. They are 11:08 AM

1 more extensive studies. We got the same result, 11:08 AM
2 which is interesting. It shows the generality of
3 this from one sample to the next. So I'm not
4 directly relying on it. It's been supplemented by
5 much broader extensive surveys. 11:08 AM
6 Q. You don't have to give me an explanation
7 of it. You can just tell me whether you are relying
8 on those surveys.
9 A. The hundred students, yeah. It's relevant
10 data to "The Affect Heuristic." It's one input to 11:08 AM

11 "The Affect Heuristic."
12 F is another variation of what is in this
13 Annenberg survey. So it says the same thing. I
14 don't need to rely on it. But it's just the same as
15 what other data exists. 11:09 AM

16 G is the study of "The Affect Heuristic"
17 by Finucane, et al., and that's part, again, of the
18 work that led to "The Affect Heuristic" and it is
19 relevant.

20 Q. What letter is that one? 11:09 AM

21 A. G.

22 Q. Okay. We can move off that now. I want
23 to ask you some questions about cause and effect,
24 which we touched on it earlier. For lack of better
25 terms I'm going to use some letters in my next few 11:10 AM

1 questions. If A causes B, A and B will be 67
2 statistically correlated; right? 11:10 AM

3 A. Not necessarily.

4 Q. Can you give me an instance in which A and
5 B would not be statistically correlated? 11:10 AM

6 A. If there are other factors involved as
7 well. And they interact with A and B, they might
8 mask that relationship.

9 Q. But if you controlled properly for those
10 other factors would A and B be statistically 11:10 AM
11 correlated?

12 A. Usually, yes.

13 Q. So in general terms a correlation is a
14 necessary factor for drawing a cause and effect
15 inference; would you agree with that? 11:10 AM

16 A. Again, it depends on the situation and
17 what -- I mean, if -there is nothing else going on
18 and everything else is perfectly controlled then
19 it's usually pretty good indicator strong link
20 there. 11:11 AM

21 Q. Okay. And if you can't find a correlation
22 between A and B there would not be a basis for
23 saying that A causes B; is that correct?

24 A. Not from that data.

25 Q. That's all I'm asking about. Now, a 11:11 AM
68

1 correlation between A and B by itself is not 11:11 AM
2 sufficient to establish that A causes B or that B
3 causes A; is that right?

4 A. No.

5 Q. No. Can you give me an instance in which 11:11 AM
6 you can draw a causal relationship simply between a
7 correlation between A and B?

8 A. I'm sorry, instance where one can draw a
9 causal relationship between A and B?

10 Q. Right. If you simply have a correlation 11:12 AM
11 between A and B is it ever possible to draw a causal
12 inference based solely on that correlation?

13 A. Yeah, if I flip the light switch and the
14 light goes on and I do that repeatedly, I would say
15 it is causal relationship. 11:12 AM

16 Q. In that example, you would have a sense as
17 to which happens first A or B in terms of time;
18 correct?

19 A. Right.

20 Q. If you do not know which happens A or B in 11:12 AM
21 terms of time, can you draw a causal inference based

22 merely on a correlation between A and B?
23 A. If you don't know what the time is or if
24 you -- if one has an opinion about what came first?
25 What are the facts in that question? 11:12 AM
69

1 MR. PIUZE: I think the witness is saying 11:13 AM
2 the question is vague and ambiguous, overbroad and
3 unintelligible and he objects to the form of the
4 question.
5 BY MR. McCARTER:
6 Q. Let's say you have no evidence that A
7 happens before B and no evidence that B happens
8 before A, you just have a correlation between A
9 and B, can you make a causal inference based solely
10 on that correlation? 11:13 AM
11 A. This is all pretty hypothetical and
12 general, so let --
13 MR. PIUZE: Let me offer an objection.
14 And please go ahead and answer it if you can, but
15 I'm going to restate the objection. 11:13 AM
16 THE WITNESS: Yeah, I find it hard to
17 answer the question at that level of generality
18 really.
19 BY MR. McCARTER:
20 Q. I'll just state the basic principle, then. 11:13 AM
21 A scientist needs more than a correlation between
22 two things to draw an inference of causality?
23 A. More than a correlation? Usually these
24 evidence doesn't exist in a vacuum. And there is
25 kind of a web or a network of things that are all 11:14 AM
70

1 part of the same picture and that comes into play as 11:14 AM
2 well how you interpret evidence. But simply just
3 because there is a correlation doesn't mean
4 definitely that there is a causal link.
5 MR. McCARTER: I'm going to mark another 11:15 AM
6 exhibit here. 5.
7 (Defendant's Exhibit 5 was
8 marked for identification and is
9 annexed hereto.)
10 BY MR. McCARTER:
11 Q. Dr. Slovic, would you please identify
12 Exhibit 5 for us?
13 A. It's a study of Adolescent Alcohol-Related
14 Risk Taking.
15 Q. It's a study by you and others? 11:15 AM
16 A. Yes. I'm the fourth author on this study.
17 Q. Does that have any significance?
18 A. Yes, it means I had the least to do with
19 the study.
20 Q. Did you read the study before it was 11:15 AM
21 published?
22 A. Probably, yes.
23 Q. And did you have an opportunity to put in
24 your own comments on what was written?
25 A. I'm sure I did. 11:15 AM
71

1 Q. Now, in this study what did you undertake 11:15 AM
2 to analyze? And by "you" I mean you and your
3 colleagues?
4 A. The role of risk perceptions and
5 personality and alcohol-related risk taking among 11:16 AM
6 adolescents.

7 Q. And in this study you found a correlation
8 between alcohol use by adolescents and lower
9 perception by adolescents of the risk of alcohol
10 use; is that right? 11:16 AM

11 A. I'm sorry. Found a correlation between
12 what?

13 Q. Between adolescents use of alcohol and
14 their perception of the risks of alcohol use.

15 A. Can you point me to what you are looking 11:16 AM
16 at?

17 Q. Page 2 under the heading "Discussion." I
18 think you described your findings there.

19 A. It says higher participation was
20 associated with the perception of greater benefits 11:17 AM
21 and fewer risks.

22 Q. So you found a relationship between
23 alcohol use by adolescents and their view of the
24 benefits and risks of alcohol use; is that right?

25 A. Yes. 11:17 AM

1 Q. Okay. Now, can you turn to Page 25, 72
2 please. 11:17 AM

3 A. Okay.

4 Q. The paragraph that begins "Finally." It's
5 at the bottom. You say there: 11:17 AM

6 "Finally, we should be cautious in our
7 interpretation of this
8 cross-sectional data. The causal
9 influences of risk perception on
10 alcohol use and alcohol risk 11:17 AM
11 behavior cannot be established
12 without longitudinal studies."
13 Did I read that right?

14 A. Yes.

15 Q. And when you were referring to 11:17 AM
16 cross-sectional data here, what type of data did you
17 have in mind?

18 A. This was a comparison of people who were
19 using alcohol with people who were not using
20 alcohol. 11:18 AM

21 Q. Okay. And because your correlation here
22 was based on cross-sectional data you said that your
23 study cannot establish that lower perceived risks of
24 alcohol use causes adolescents to use alcohol; is
25 that right? 11:18 AM

1 A. Well, that's what this says. Um-hum. 73 11:18 AM

2 Q. Do you agree with that statement?

3 A. I think there is some truth to it.

4 Q. Okay. Do you agree with the statement
5 that the causal influences of risk perception on 11:19 AM
6 alcohol use and alcohol risk behavior cannot be
7 established without longitudinal studies?

8 A. I think longitudinal studies are good to
9 supplement this data, sure.

10 Q. Well, here you are not just saying that 11:19 AM
11 longitudinal studies would be good to supplement the
12 data; right? You are saying that longitudinal
13 studies are necessary for one to make a causal
14 judgment about the relationship between risk
15 perception and alcohol use; correct? 11:19 AM

16 A. That's what is said here, yes.

17 Q. And do you agree with that statement?

18 A. Well, not completely. I mean, this is a
19 typical, you know, thing that is often put in the
20 end of a research study that we should be cautious. 11:19 AM
21 Academics are often cautious in their
22 interpretations.

23 Q. And why are statements like this put in
24 the end of academic studies?

25 A. Because this is a -- this particular study 11:20 AM
74

1 is, you know, is an early -- it depends how much 11:20 AM
2 other work is out there like this. This was kind of
3 a unique study in a sort of way and we felt that it
4 should be repeated and extended.

5 Q. And you are not suggesting that one should 11:20 AM
6 be more cautious in their academic work than they
7 should be in litigation, are you?

8 A. No.

9 Q. You believe that a scientist like yourself 11:20 AM
10 should be equally cautious in their litigation work
11 as in their academic work?

12 A. Yes.

13 Q. Now, would you agree that cross-sectional
14 data cannot establish that adolescents perceptions
15 of the risks of smoking caused them to start 11:20 AM
16 smoking?

17 A. Would you repeat that, please.

18 Q. Would you agree that cross-sectional data
19 cannot establish that adolescents perceptions of the
20 risks of smoking caused them to start smoking? 11:21 AM

21 A. One more time, please. That their
22 perceptions? Say it again.

23 Q. Would you agree that cross-sectional data
24 cannot establish that adolescents perceptions of the
25 risks of smoking cause them to start smoking? 11:21 AM
75

1 A. That cross-sectional data -- there is 11:21 AM
2 something about the question that is making it hard
3 for me to answer. That cross-sectional data causes
4 them about the correlations.

5 Q. I will read it one more time and then I'll 11:21 AM
6 have the reporter read it back. Would you agree
7 that cross-sectional data cannot establish that
8 adolescents perceptions of the risks of smoking
9 caused them to start smoking?

10 A. I see. Well, what do you mean 11:22 AM
11 "establish"? You mean by itself? In a vacuum?

12 Q. In the absence -- I mean in the absence of
13 longitudinal studies establishing a correlation that
14 cross-sectional data cannot establish that
15 adolescents perceptions of the risks of smoking 11:22 AM
16 caused them to start smoking?

17 A. The word "establish" I think -- I don't
18 agree with the use of the word "establish" in this
19 context. I think that it provides evidence for
20 inferences about the role of perception in 11:22 AM
21 influencing behavior. It's one part of a mosaic of
22 data which is coming from all different directions
23 and is just a piece of this puzzle.

24 So I mean, if this was the only study, the
25 first study ever done and it shows a correlation and 11:23 AM
76

1 it's cross-sectional, I would say, yeah, okay. I 11:23 AM
2 would say what we said in the alcohol study, we need

3 to do more studies and it would be good to have
4 longitudinal data.

5 But that's not the case with smoking. 11:23 AM
6 There is a lot of data out there. So it fits into a
7 pattern and that helps one interpret the data.

8 Q. Let's assume that you have many studies
9 out there, but they are all cross-sectional on the
10 relationship between adolescents perceptions and the 11:23 AM
11 risks of smoking and smoking initiation.

12 Would you agree that that data because
13 it's all cross-sectional cannot establish that
14 adolescents perception of the risks of smoking
15 causes them to start smoking? 11:24 AM

16 A. No, because, again, the -- I think what
17 happens is one builds an opinion or inference. The
18 scientists, as well as everyone else, you build upon
19 evidence. The meaning of a cross-sectional study, I
20 think, is different if it's the only thing out there 11:24 AM
21 than if it's -- if that's all you have to go by.

22 And also, maybe one has information
23 longitudinal in nature from other related domains.
24 So maybe you don't have it on smoking, but you know
25 that perception of risk influences behavior in a lot 11:24 AM
77

1 of other areas. So even though you find it 11:24 AM
2 cross-sectionally here, that's a strong indication,
3 it enhances the likelihood that there is a causal
4 link here.

5 So it's a matter of what is the 11:25 AM
6 probability that there is a relationship here and
7 how does this particular cross-sectional evidence
8 influence your judgment of the probability. And
9 that influence will be determined not just by the
10 study itself, but what other information you have 11:25 AM
11 about the topic.

12 Q. Okay. I want you to assume that you don't
13 have any of this other information that you've been
14 talking about. All you have is cross-sectional
15 studies showing relationship between adolescents 11:25 AM
16 perceptions of the risk of smoking and their
17 starting smoking. That's all you have.

18 A. Okay. Okay. Assuming that, and assuming
19 no other information about risk perception and the
20 risky behaviors only that which I think is a very 11:26 AM
21 hypothetical and unreal premise, and then I would
22 say you probably couldn't say that it established
23 that and just how much it would influence your,
24 change your opinion about the likelihood that there
25 is a link, that is a little hard to judge. It's a 11:26 AM
78

1 little hypothetical for me. 11:26 AM

2 Q. Just to make sure the record is clear, I'm
3 going to ask the question again and see if we can
4 get an answer. Let's suppose all you had was
5 cross-sectional data. You had nothing else. Would 11:26 AM
6 you agree that cross-sectional data cannot establish
7 that adolescents perceptions of the risks of smoking
8 causes them to start smoking?

9 A. And the cross-sectional data is of what
10 nature? 11:27 AM

11 Q. Of a cross-sectional nature. I think you
12 were able to answer the question before. The
13 question hasn't really changed?

14 A. Well, there is different kinds of
15 cross-sectional data. I mean, it can be younger 11:27 AM
16 versus older. It can be smokers versus nonsmokers.
17 I mean, I really would have to take a look at that,
18 at the data, you know, to the specifics of the type
19 of cross-sectional comparisons that were being made.

20 Q. Can you think of any cross-sectional data 11:27 AM
21 that standing alone would enable you to establish
22 that adolescents perceptions of the risk of smoking
23 caused them to start smoking?

24 A. Well, I think I would find this data
25 informative and suggestive, but not conclusive if it 11:28 AM
79
1 was standing alone. 11:28 AM

2 Q. Okay. Now, you in this paper we are
3 looking at on Page 25 -- you put it away too early.
4 You do use the word established at the bottom of
5 Page 25; is that right? 11:28 AM

6 A. Yes.

7 Q. You say the causal influences of risk
8 perception on alcohol use and alcohol risk behavior
9 cannot be established without longitudinal studies;
10 right? 11:28 AM

11 A. That's what we say here.

12 Q. Okay. Now, what I'm going to do is
13 substitute smoking for alcohol use in this sentence
14 and I'm going to ask you if you agree with it.
15 The causal influences of risk perception 11:28 AM
16 on smoking and smoking risk behavior cannot be
17 established without longitudinal studies. Do you
18 agree with that statement?

19 A. There is so much else out there about
20 smoking that, you know, I think, again, there is a 11:29 AM
21 web out there of studies and facts and information
22 that any study would have to fit in there and
23 contribute to. So I'm not sure I would agree with
24 that.

25 Q. Tell me what there is out there about 11:29 AM
80
1 smoking that wasn't out there about alcohol use when 11:29 AM
2 you wrote this paper?

3 A. Well, first of all, I don't think there is
4 as much -- I don't know the literature on alcohol
5 use and I don't know that my colleagues know it as 11:30 AM
6 well, either, so we probably viewed this study as
7 pretty unique. But the alcohol study is
8 exploratory. I think there is a lot on perception
9 of risk of smoking. There is some longitudinal
10 studies that look at attitudes and perceptions of 11:30 AM
11 kids as they age and initiation of smoking. I
12 believe that those -- that there is longitudinal
13 data that is relevant to smoking.

14 Q. Okay. You listed, I think, three things.
15 One was the alcohol study was exploratory. The 11:31 AM
16 second was there is a lot out there on the
17 perceptions of the risks of smoking. And the third
18 was that longitudinal -- there are longitudinal
19 studies you think on smoking and risk perception?

20 A. Yes. 11:31 AM

21 Q. And I'm not -- do your first two comments
22 mean anything that is different from your third
23 statement, that is when you say the alcohol study is
24 exploratory or there is a lot out there on the

25 perception of the risks of smoking, is that any 11:31 AM
81

1 different than your third comment that longitudinal 11:31 AM
2 studies on smoking and risk behavior exist?

3 A. Well, it's not clear -- I don't think it
4 was clear to us that there were longitudinal studies
5 with alcohol and risk perception. 11:31 AM

6 Q. Now, can you identify for me what
7 longitudinal studies there are in the literature on
8 the relationship between smoking and risk
9 perception?

10 A. I can't give you those citations off the 11:32 AM
11 top of my head, no.

12 Q. And can you think of any other differences
13 between what you had in the scientific literature on
14 alcohol use when you wrote this article and what you
15 have in the literature today on smoking? 11:32 AM

16 A. I'm sorry. Please repeat that.

17 Q. I'm trying to figure out what is different
18 between smoking because when I insert smoking into
19 this sentence you don't agree with it and alcohol
20 because when alcohol is in the sentence you do agree 11:32 AM
21 with it. And you gave me longitudinal studies with
22 smoking are one reason, but you can't identify them.
23 I'm asking if there is any other reason why smoking
24 is different from alcohol?

25 A. Yeah, I'm not even -- the alcohol 11:33 AM
82

1 situation is very different for me and I think for 11:33 AM
2 my colleagues. As I say, we were exploring that.
3 We weren't familiar with the literature. And we
4 thought, therefore, we should put this caution in.
5 There may well have been other work, but given that 11:33 AM
6 what we did was kind of a first, we saw as a first
7 study in this area, we thought we should be
8 cautious. I don't think that is the case with
9 tobacco.

10 Q. You said that alcohol is different from 11:33 AM
11 smoking, but I only have one reason why you say it's
12 different that you know of or you've seen you think
13 longitudinal studies on smoking and when you did
14 this paper on alcohol you hadn't seen any such
15 studies. Are there any other differences between 11:33 AM
16 alcohol and smoking with respect to this issue?

17 A. I think there is a lot of differences
18 between alcohol use and tobacco.

19 Q. Are they differences that are relevant to
20 this issue as to whether you can say there is a 11:34 AM
21 cause and effect relationship between risk taking
22 and perception of risk?

23 A. Well, in this population of kids -- I
24 mean, I think the issues of the risks imposed by
25 addiction, for example, is different. Although some 11:34 AM
83

1 people can get addicted to alcohol. I don't think 11:34 AM
2 it's the same level that we have with tobacco, same
3 kind of, same type of addiction.

4 Q. Do people get addicted to tobacco before
5 they use it? It's not a trick question. 11:35 AM

6 A. No.

7 Q. Then how is the issue of addiction
8 relevant to whether risk perception causes somebody
9 to start smoking?

10 A. I was thinking in a more general sense of 11:35 AM
11 the risk perception smoking. I mean, this is -- I
12 mean, if you don't perceive any risk of yourself
13 getting addicted to the cigarette, to tobacco, then
14 I think that will make it more likely that you will
15 experiment with it. 11:35 AM

16 Q. Okay. Are there any other differences
17 between alcohol and smoking that enable you to agree
18 with this statement when we have alcohol in there
19 and not agree with it when smoking is in there?

20 A. Yeah, I guess, I basically don't agree 11:36 AM
21 with the statement here on alcohol in retrospect. I
22 mean, it was put in there -- it was in the study. I
23 don't think I initiated this statement. And I don't
24 think we thought that carefully about this
25 statement. As a general caution for an exploratory 11:36 AM
84

1 study, I don't have that feeling with tobacco. 11:36 AM

2 Q. Okay. And when you reviewed the draft of
3 this study, do you recall commenting and saying,
4 telling your colleagues that they should take out
5 this language? 11:36 AM

6 A. No, I don't recall now.

7 Q. Now, you don't agree, then, that people
8 should be cautious when they interpret
9 cross-sectional data showing a relationship between
10 smoking and perception of the risks of smoking? 11:36 AM

11 A. I think we should be cautious, yes. So I
12 don't agree.

13 Q. You think people should be cautious when
14 they interpret?

15 A. Yes. Yes. 11:37 AM

16 MR. McCARTER: Let's mark 6.
17 (Defendant's Exhibit 6 was
18 marked for identification and is
19 annexed hereto.)

20 BY MR. McCARTER:

21 Q. Dr. Slovic, will you identify this
22 statement for the record, please. Or this article?

23 A. It's a paper on risk perception
24 personality factors and alcohol use.

25 Q. And you just published this last year; is 11:37 AM
85

1 that right? 11:37 AM

2 A. It was published in 2001, yes.

3 Q. And this is another study that you did on
4 risk perception and alcohol use among adolescents;
5 is that right? 11:38 AM

6 A. No.

7 Q. It's the same study?

8 A. It's the same study.

9 Q. Okay. This is the study in final form?

10 A. This is the study. This version was 11:38 AM
11 published.

12 Q. Give me a second, please. If you look on
13 Page 178 of this article. You have the same --

14 A. It's basically the same.

15 Q. The same cautionary language; right? 11:39 AM

16 A. Yes, it's the same article.

17 Q. The wording is a little different. If you
18 look at Page 178, the paragraph that begins "This
19 exploratory study"? 11:39 AM

20 A. Yes.

21 Q. Is a little different than what you have
22 on Page 25 of --
23 A. Right.
24 Q. -- of -- you have to let me finish.
25 -- that you have on Exhibit 5; is that 11:39 AM
86
1 correct? 11:39 AM
2 A. Yes.
3 Q. And, in fact, you say here as well that,
4 in the third sentence, the data were cross-sectional
5 and therefore no causal inferences can be made; is 11:39 AM
6 that correct?
7 A. Yes.
8 Q. And do I understand your testimony to be
9 that you now disagree with this statement?
10 A. Yeah, I would have to think about this 11:39 AM
11 statement in light of it may be too strong of a
12 given that it's exploratory. Yeah, I think
13 basically what I said about the earlier version goes
14 for this version.
15 Q. Do you intend to write a letter to the 11:40 AM
16 editor of this journal to correct this statement
17 that you don't agree with anymore?
18 A. No.
19 Q. Now, have you ever conducted a prospective
20 or longitudinal study of smoking and perception of 11:40 AM
21 the risks of smoking?
22 A. No.
23 Q. Is a prospective study the same as a
24 longitudinal study or is there some difference
25 between the two? 11:40 AM
87
1 A. I'm not sure. I know what a longitudinal 11:40 AM
2 study is. Unless you can define a prospective
3 study.
4 Q. Well, if you look at Page 178 of the
5 previous exhibit, Exhibit 6, that paragraph we were 11:41 AM
6 just looking at you use the term prospective study.
7 A. Page 176?
8 Q. 178. I'm sorry. It's the paragraph "This
9 exploratory study." And just to compare that to the
10 previous exhibit. You use the word "longitudinal 11:41 AM
11 study." So am I correct that you mean the same
12 thing by both of those terms?
13 A. Where does the word "prospective" come in?
14 Q. It is towards the end of the fourth
15 sentence in the paragraph that begins "This 11:41 AM
16 exploratory study." It says:
17 "The model provides a description of the
18 associations among the model
19 variables that should be tested in
20 a prospective study to establish 11:42 AM
21 causal inferences."
22 A. I guess that is longitudinal study that
23 plays out in the future.
24 Q. Have you ever conducted a prospective or
25 longitudinal study of the relationship between 11:42 AM
88
1 cigarette advertising and smoking initiation or 11:42 AM
2 continuation?
3 A. No, I haven't conducted such a study.
4 Q. Are you aware of any such studies?
5 A. Between advertising and initiation? 11:42 AM

6 Q. Initiation and/or continuing to smoke?
7 A. Yes, I'm aware of such studies.
8 Q. Can you identify them for us?
9 A. Not off the top of my head.
10 Q. And have you ever conducted a prospective 11:43 AM
11 study or longitudinal study of the relationship
12 between cigarette advertising and affect?
13 A. I haven't conducted such a study.
14 Q. Can you identify any such studies?
15 A. Of cigarette advertising and affect? 11:43 AM
16 Q. And affect?
17 A. I think this is generally the kinds of
18 studies that are done by advertising -- by marketing
19 people as they design advertising campaigns. It's
20 the kind of material I saw in the tobacco documents 11:43 AM
21 that you expose people to advertising material and
22 then subsequently question them about their feelings
23 and thoughts and images.
24 Q. Can you identify any other studies,
25 prospective studies of the relationship between 11:44 AM
89
1 cigarette advertising and affect? 11:44 AM
2 A. Well, as I say, there seems to be a fair
3 amount of literature in the tobacco documents on
4 that. This is the general assertions of people who
5 write about advertising and marketing. And even in 11:44 AM
6 the context of tobacco. I mean, it's all -- it's
7 pervasive in advertising literature the relationship
8 between the images and other words and names and
9 things like that and feelings and affect.
10 Q. Can you identify any of that literature 11:45 AM
11 with greater specificity than you have?
12 A. With regard to?
13 Q. These prospective studies that you are
14 talking about of the relationship between cigarette
15 advertising and affect? 11:45 AM
16 A. I would have to dig references out. I
17 think -- I mean, it's fundamental, I think, to
18 marketing and advertising. The link between name
19 and image and other components of advertising and
20 promotion and the feelings that those generate. 11:45 AM
21 Q. Have you ever conducted a prospective or
22 longitudinal study of the relationship between
23 affect and smoking initiation?
24 A. I haven't conducted such a study.
25 Q. Are you aware of any such studies? 11:46 AM
90
1 A. Between affect and smoking? Yes, I think 11:46 AM
2 there are studies in which children were asked to
3 respond to names or images and so forth and then
4 they were followed longitudinally to see which of
5 these kids initiated tobacco use, but I can't give 11:46 AM
6 you a citation directly.
7 Q. And have you ever conducted a prospective
8 or longitudinal study of the relationship between
9 affect and continuing smoking, that is not quitting?
10 A. I think there is material in the book on 11:46 AM
11 that point probably by Jamieson and Romer. I didn't
12 look at that directly, but I think there is
13 information there.
14 Q. But you, yourself, have not conducted a
15 study, a prospective or longitudinal study of the 11:47 AM
16 relationship between affect and continuing smoking;

17 correct?

18 A. I haven't focused in that. I think there

19 is probably correlations between affect towards

20 smoking and quit attempts, but I haven't written it 11:47 AM

21 up.

22 Q. And you haven't done any prospective or

23 longitudinal studies on the subject, have you?

24 A. No, I haven't.

25 Q. You mentioned Jamieson and Romer. 11:47 AM

91

1 Jamieson and Romer are authors of some of the 11:47 AM

2 chapters in your smoking book?

3 A. Right.

4 Q. And Jamieson and Romer analyzed the data

5 from Annenberg Surveys I and II; correct? 11:48 AM

6 A. Yes.

7 Q. And Annenberg Surveys I and II were

8 cross-sectional in nature; correct?

9 A. Yes.

10 Q. They were not longitudinal or prospective 11:48 AM

11 studies; is that right?

12 A. That's right.

13 Q. And so Jamieson and Romer had not

14 analyzed, to your knowledge, or conducted a

15 prospective study of the relationship between affect 11:48 AM

16 and continuing smoking; correct?

17 A. No, not a prospective study.

18 Q. And are you aware of any such studies on

19 that subject conducted by anyone?

20 A. Not directly, no. 11:48 AM

21 MR. McCARTER: Let's get another exhibit

22 out here.

23 MR. PIUZE: While you are doing that. How

24 do you choose between the exhibits that I'm given

25 copies of and the exhibits that I'm not given copies 11:49 AM

92

1 of. Just happenstance? 11:49 AM

2 MR. McCARTER: There was no selection

3 process involved. I just only have one copy of

4 some, but you will be very pleased to know I have an

5 extra copy of this one. 11:49 AM

6 MR. PIUZE: I am very pleased.

7 (Defendant's Exhibit 7 was

8 marked for identification and is

9 annexed hereto.)

10 BY MR. McCARTER:

11 Q. This, Dr. Slovic, is just a chapter from

12 Monograph 14 by the National Cancer Institute. Have

13 you ever reviewed or seen this monograph?

14 A. No.

15 Q. Just for the record, this is a chapter 11:49 AM

16 entitled "Changing Adolescent Smoking Prevalence:

17 Impact of Advertising Interventions." It runs from

18 Pages 171 through 181 of the monograph.

19 I would like to direct your attention to

20 Page 174. And in particular the only full paragraph 11:50 AM

21 on that page. Let me just read something for you.

22 "It is a well-established fact that

23 consumers selectively attend to

24 ads that support their prevailing

25 product-related attitudes and 11:50 AM

93

1 behaviors, in part to avoid 11:50 AM

2 cognitive dissonance and preserve
3 self-esteem. Hence, while there
4 is generally a positive
5 correlation between ad exposure 11:50 AM
6 and products beliefs and
7 intentions, this seems to be due
8 to reverse causality, to a large
9 extent: beliefs and intentions
10 drive exposure to advertising 11:50 AM
11 rather than exposure to
12 advertising driving beliefs and
13 intentions."
14 Do you agree with what I just read,
15 Dr. Slovic? 11:50 AM
16 MR. PIUZE: Let me just interrupt here for
17 a second. I didn't get the last answer which was
18 something like have you ever seen this before. What
19 was the answer to that question?
20 THE WITNESS: No. 11:51 AM
21 MR. PIUZE: You can't cross examine him on
22 stuff that he hasn't reviewed or relied on.
23 BY MR. McCARTER:
24 Q. Then I'll just ask the question, then. Do
25 you agree that while there is generally positive 11:51 AM
94
1 correlation between ad exposure and product beliefs 11:51 AM
2 and intentions this is due to reverse causality,
3 that is, that beliefs and intentions drive exposure
4 to advertising rather than exposure to advertising
5 driving beliefs and intentions? 11:51 AM
6 A. No.
7 Q. Why not?
8 A. Because I think that it goes against the
9 basic principles and body of knowledge that we have
10 about advertising and its influence. 11:51 AM
11 It also goes against what I know about the
12 relationship between image and affect and judgment
13 and decision.
14 I mean, the whole -- it's not that there
15 is some truth to this type of statement. I mean, 11:52 AM
16 sometimes, you know, people's beliefs and attitudes
17 will influence their attention and there is, you
18 know, definitely something called cognitive
19 dissonance. I mean, it's a complex set of
20 relationships. But to state, you know, as a general 11:52 AM
21 principle that advertising doesn't influence
22 people's beliefs and intentions, I don't agree with
23 that.
24 Q. I want to get back to a more general level
25 here. Let's talk about the opinions that you have 11:52 AM
95
1 in your federal report that you intend to offer in 11:53 AM
2 this case. The way I see it, you have two broad
3 sets of opinions. And if what I say isn't right,
4 let me know. You have one set of opinions that has
5 to do with why Dr. Viscusi's opinions are not valid. 11:53 AM
6 Right? That is one set of the opinions that you
7 offer?
8 A. Yes.
9 Q. And the other set of opinions that I see
10 you offering is opinions on the relationship between 11:53 AM
11 cigarette advertising using positive images and
12 smoking initiation or smoking behavior and you talk

13 about the role of affect and risk perception in that
14 process. Is that a general --
15 A. Yes. 11:53 AM
16 Q. That is a fair categorization of the other
17 set of opinions that you offer?
18 A. Yes. Right.
19 Q. Okay. I want to start off by talking
20 about your opinions with respect to Dr. Viscusi's 11:53 AM
21 work. Is it your opinion that Dr. Viscusi does not
22 have an adequate basis for offering his opinion that
23 smokers over perceived the risks of smoking?
24 A. Yes.
25 Q. And another way of saying that is you 11:54 AM
96
1 believe that Dr. Viscusi's opinions are not valid? 11:54 AM
2 A. That's correct.
3 Q. And in your expert report Paragraph 12 of
4 the federal report, and you can look at it if you
5 like, you state several reasons why you think 11:54 AM
6 Dr. Viscusi's opinions are not valid; correct?
7 A. Yeah, I haven't --
8 Q. You can look at it if you want. It's not
9 a trick question.
10 A. Yes. I'm sure. 11:54 AM
11 Q. You may want to look at it for this
12 question which is: Are there any reasons other than
13 those that you mention in your federal report any
14 reasons why you think Dr. Viscusi's opinions are not
15 valid? 11:54 AM
16 A. No.
17 Q. Okay. Let's move on to the second
18 category of opinions that you intend to offer, and
19 those are the opinions that you have on the
20 relationship between cigarette advertising and 11:55 AM
21 smoking and how affect and risk perception fit into
22 that relationship. I'm not going to mark this as an
23 exhibit, but let's turn to your book here "Smoking
24 Risk Perception and Policy." What I have in mind is
25 on Page 65. Okay. Do you see Figure 4.1 on there? 11:55 AM
97
1 A. Yes. 11:56 AM
2 Q. Okay. And Figure 4.1 is a causal model;
3 right?
4 A. Yes.
5 Q. And what is a causal model? 11:56 AM
6 A. Causal model is a model of factors that
7 are predicted to connect to each other in direct and
8 indirect ways to predict some outcome of interest.
9 Q. Okay. Now, I told you earlier that I may
10 have you draw something, what I would like for you 11:56 AM
11 to do is if you could do a causal model in terms of
12 how your opinions relate to one another going from
13 cigarette advertising to smoking behaviors.
14 Basically, I am trying to figure out the
15 relationship between how affect fits in there and 11:56 AM
16 how risk perception fits in there. Do you have any
17 objection to doing that?
18 A. Let me just write down what the element is
19 first so I understand your question.
20 Q. What I'm interested in knowing is the 11:57 AM
21 relationship between and among cigarette
22 advertising, affect, risk perception, and smoking
23 initiation and continuation, meaning not quitting.

24 That's all I want.

25 A. That's all. 11:57 AM
98

1 Q. I understand. 11:57 AM

2 A. That's pretty general, pretty fundamental

3 set of factors that you have.

4 Q. And I will give you a piece of paper.

5 A. No, I'm not going to draw a model. I'll 11:57 AM

6 describe it. I'll answer your question verbally.

7 Q. Okay. Well, I may draw one here and ask

8 you to tell me if it's right or not. Tell me how

9 those things relate together in your opinion?

10 A. So let's think about smoking initiation. 11:57 AM

11 Why would it almost always takes place among quite

12 young people, you know, ten, twelve, whatever very

13 early ages taking a cigarette. Okay? So the

14 question is well, what motivates that behavior?

15 There is nothing natural about or even pleasant at 11:58 AM

16 the beginning about putting a stack of burning

17 leaves in your mouth. Okay? I mean, why would we

18 do this? Okay? What motivates someone to do this?

19 Well, there are a lot of direct and

20 indirect factors. You know, maybe a friend offering 11:58 AM

21 you a cigarette would be one instigating action. Or

22 maybe you are just -- you know, you just see some

23 cigarettes lying around and you just decide to try

24 one. There is something that interests you or makes

25 it or makes you do that. I mean, you approach this 11:59 AM
99

1 cigarette and decide to put it in your mouth and 11:59 AM

2 smoke it.

3 So then the question is, well, how does

4 risk and affect and advertising play into this. So,

5 well, first, now, let's jump ahead in the model to 11:59 AM

6 affect. Okay? Affect is one of two basic

7 ingredients of human thought and motivation that

8 influences thinking and behavior. The other is

9 analysis. The analysis is the kind of thinking that

10 an epidemiologist would do or a doctor in terms of 11:59 AM

11 what is the evidence out there and the statistics

12 about smoking and various kinds of diseases. You

13 know, that's the analytic type of information

14 processing.

15 The affect side is what we call the 12:00 PM

16 experiential side. You know, how does it feel. How

17 do I feel about this cigarette or the act of

18 smoking? Does it attract me or repel me

19 positive/negative. Okay?

20 So basically, you know, as you have the 12:00 PM

21 opportunity to initiate smoking, you then are kind

22 of buffalated or influences by either your

23 experiential system or your analysis of the case of

24 the situation.

25 Now, if you should -- you know, if your 12:00 PM
100

1 father is an epidemiologist you might approach the 12:00 PM

2 task more analytically and think about what he's

3 told you about the statistics and so forth of

4 smoking. But what seems to be the case is that

5 young people aren't thinking that way when -- they 12:01 PM

6 are not thinking analytically when they take their

7 first cigarette. They are kind of going by their

8 feelings. Okay? And so the question is, well, what

9 has created the, you know, this -- and in order to
10 actually initiate you're positive feelings must be 12:01 PM
11 stronger than your negative feelings. What creates
12 those positive feelings? Where do they come from?
13 Well, okay. Maybe they come from your
14 friends who you see people smoking and having a good
15 time. But I'm assuming that to a significant degree 12:01 PM
16 one contributor to those positive feelings is the
17 massive advertising and promotional efforts that the
18 tobacco industry has made over a long period of
19 time. And that has created positive feelings about
20 smoking which for that subgroup of people who 12:02 PM
21 initiate are very critical.

22 Q. Can I stop you right there? So if
23 somebody wanted to draw a causal model of your
24 theory or opinions you would -- one would draw an
25 arrow between cigarette advertising and affect; is 12:02 PM
101
1 that correct? 12:02 PM
2 A. Yes.
3 Q. Okay. Was there more that you wanted to
4 add?
5 A. Well -- 12:02 PM
6 Q. There are certain --
7 A. Well, you have risk perception in this
8 picture, in this model. And first we have evidence
9 that risk and benefit perception are kind of linked
10 in the mind. That risk and benefits are kind of 12:03 PM
11 derived in part from our feelings about whatever it
12 is we're evaluating the risks and benefits about and
13 in an inverse way and that is what some of the
14 research relates to.

15 Q. Can you stop there? 12:03 PM
16 A. Sure.
17 Q. So you are saying that feelings can cause
18 risk perception?
19 A. I think that is what risk perception is.
20 I mean, the question is what is risk perception? It 12:03 PM
21 is in part feelings. This thing scares me. It
22 makes me uneasy. And it is in part analysis, what
23 you know as an analyst can also create your
24 judgment. Which perception is really can be either
25 assessing a risk or a judgment of risk. And it is a 12:04 PM
102

1 mix of analytic and experiential thinking. But for 12:04 PM
2 young kids, it seems that basically the analytic
3 side is turned down, the volume on that is turned
4 way down and it is experiential side that is
5 dominant.
6 So it's just causing the feelings that are
7 important. And we also know the positive feelings
8 tend to depress perception of risk. So risk
9 perception -- so there is two aspects that risk
10 perception comes into this model. One is affect 12:04 PM
11 would depress perception of risk, but the other
12 element of this model is that perception of risk,
13 you know, the analytic side of it may not even be
14 tuned into.

15 Q. Let me tackle those individually. So 12:05 PM
16 affect depresses perception of risk; right?
17 A. Positive affect.
18 Q. Positive affect. So if I wanted to draw a
19 causal arrow from positive affect to risk perception

20 I would draw -- in other words, if I wanted to 12:05 PM
 21 represent the relationship between positive affect
 22 and risk perception in a causal model I would draw
 23 an arrow from positive affect to risk perception?
 24 A. Yes.
 25 Q. And is there any arrow that I should draw 12:05 PM
 103
 1 between risk perception going toward positive 12:05 PM
 2 affect?
 3 A. It's possible that there is a reciprocal
 4 relationship, that is, if you turn your analytic
 5 side on and you listen to your epidemiologist father 12:05 PM
 6 and he explains the -- all of the negative aspects
 7 that could affect your affective feelings.
 8 Q. You said "could," do you know whether
 9 that, in fact, occurs in people?
 10 A. I think it occurs in a lot of people. I 12:06 PM
 11 think a lot of people have heard that message and
 12 have negative -- that's why the predominant affect,
 13 if you just take a broad sampling of say, kids, you
 14 know or college students or whatever right now the
 15 predominant affect is negative. 12:06 PM
 16 Q. And so when I'm drawing a causal model I
 17 would draw an arrow between risk perception and
 18 positive affect going up towards positive affect?
 19 A. I think the arrows go both ways.
 20 Q. So I can just put two heads on the arrow? 12:07 PM
 21 A. Yes.
 22 Q. And what about the relationship between
 23 cigarette advertising and risk perception; is there
 24 a direct relationship between the two or does any
 25 affect of cigarette advertising on risk perception 12:07 PM
 104
 1 operate through positive affect? 12:07 PM
 2 A. I don't know in terms of the direct
 3 relationship what that is. You know, it depends on
 4 what advertising you are talking about.
 5 Q. Let's talk about the advertising that 12:07 PM
 6 you've seen, tobacco advertising you've seen. The
 7 advertising you've seen is heavenly and laden with
 8 imagery; is that right?
 9 A. Um-hum.
 10 Q. And does that type of advertising have an 12:07 PM
 11 impact, a direct impact on risk perception, to your
 12 knowledge?
 13 A. I would infer that it has impact through
 14 the operation of The Affect Heuristic. I have not
 15 done direct studies of exposing people to cigarette 12:08 PM
 16 advertising and then having them evaluate the risk.
 17 Q. Okay. And you've started off by talking
 18 about smoking initiation. I just wanted to be able
 19 to draw my arrows on here. Positive affect in your
 20 opinion causes smoking initiation; is that right? 12:08 PM
 21 A. Yes.
 22 Q. Okay. So I should draw an arrow from
 23 positive affect to smoking initiation?
 24 A. Yes.
 25 Q. And how about risk perception, does risk 12:08 PM
 105
 1 perception aside from acting through positive affect 12:08 PM
 2 have any direct effect on smoking initiation in your
 3 opinion?
 4 A. Yes.

5 Q. So I can draw an arrow from risk 12:09 PM
6 perception to smoking initiation?
7 A. Yes, with a negative sign.
8 Q. That is too sophisticated for me. I don't
9 have signs.
10 A. Okay. 12:09 PM
11 Q. One thing you didn't talk about was
12 decisions to continue smoking once you've already
13 started. Is positive affect associated directly
14 with smoking continuation?
15 A. I would assume that it is. 12:09 PM
16 Q. Do you have anything -- any direct
17 evidence of that or is it just an assumption?
18 A. Well, I mean you said positive affect, but
19 the other side of that is negative affect. Most
20 smokers seem to want to quit and be trying to quit. 12:09 PM
21 So I assume that that is being driven by negative
22 affect. So to the extent that there is positive
23 affect that can offset that negative affect it would
24 dampen that desire to quit.
25 Q. Okay. In terms of the causal model should 12:10 PM
106
1 I draw an arrow between positive affect and -- 12:10 PM
2 A. Yes.
3 Q. And let's talk about risk perception and
4 its relationship to smoking continuation. Should I
5 draw an arrow between risk perception and smoking 12:10 PM
6 continuation?
7 A. Yes.
8 Q. I'll show you what I've drawn and tell me
9 if there is anything in here that you do not agree
10 with. 12:10 PM
11 MR. PIUZE: Aside from the lack of the
12 negative which is already built-in?
13 MR. McCARTER: We're assuming that any of
14 these relationships can be positive or negative.
15 MR. PIUZE: You are. Is that the 12:10 PM
16 testimony?
17 THE WITNESS: I'm sorry?
18 BY MR. McCARTER:
19 Q. The basis of this causal model that I have
20 drawn does not make any assumption one way or 12:10 PM
21 another whether an arrow should reflect a positive
22 or a negative?
23 A. If you want. If that is the way you want
24 to do your model.
25 Q. Do you want me to put -- 12:11 PM
107
1 A. No, you can leave it more general. So -- 12:11 PM
2 yeah. I'm okay with that.
3 Q. Is there anything you would add to this?
4 A. I can't think of anything at the moment.
5 MR. McCARTER: Okay. Let's mark that as 12:11 PM
6 an exhibit.
7 MR. PIUZE: What number was that?
8 THE REPORTER: 8.
9 MR. PIUZE: Was the monograph 7?
10 MR. McCARTER: Yes. 12:11 PM
11 (Defendant's Exhibit 8 was
12 marked for identification and is
13 annexed hereto.)
14 BY MR. McCARTER:
15 Q. Dr. Slovic, the causal model that you 12:11 PM

16 didn't have any suggestions for changing is now
17 Exhibit 8; is that correct?
18 A. Yes.
19 Q. Let me just summarize your opinions here.
20 It's your belief that images and cigarette 12:12 PM
21 advertising causes positive affect in people;
22 correct?
23 A. It creates positive -- it links positive
24 affect to tobacco products and hence smoking.
25 Q. Okay. And positive affect has the effect 12:12 PM
108
1 of reducing risk perception, in your opinion? 12:12 PM
2 A. It tends to work that way, yes.
3 Q. And heightened risk perception tends to
4 reduce positive affect?
5 A. Yes. 12:13 PM
6 Q. And in your opinion positive affect leads
7 to smoking initiation in some people?
8 A. It contributes to it, yes. Um-hum.
9 Q. And risk perception is related to smoking
10 initiation as well? 12:13 PM
11 A. Yes.
12 Q. And positive affect is related to smoking
13 continuation, that is not quitting; is that right?
14 A. Yes.
15 Q. And then your opinion risk perception also 12:13 PM
16 is associated with continuing smoking?
17 A. Yes.
18 MR. McCARTER: Why don't we take a break
19 right now.
20 (The luncheon recess was taken
21 at 12:13 P.M.)
22
23
24
25

109

1 APPEARANCES OF COUNSEL:
2 (P.M. SESSION)
3
4 MICHAEL J. PIUZE, ESQ.
5
6 ROBERT A. McCARTER, III, ESQ.
7
8 THOMAS W. STOEVEER, ESQ.
9
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11
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14
15
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19 REPORTED BY:
20
21 KELLIE MITCHELL, CSR No. 7273
22
23
24
25

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1 (The deposition of PAUL SLOVIC
2 was reconvened at 1:00 P.M.)
3
4 PAUL SLOVIC,
5 having been previously duly sworn, testified further
6 as follows:
7
8 EXAMINATION (CONTINUING)
9 BY MR. McCARTER:
10 Q. Back on the record. I want to talk about 01:00 PM
11 your opinion that Philip Morris intended to target
12 youth with its advertising. That is an opinion you
13 have; right?
14 A. That is an opinion, but I'm not going to
15 address that directly. I mean, I assume there are 01:00 PM
16 people in this case who will describe the
17 advertising practices of Philip Morris. What was
18 done. And my focus is on, you know, the
19 psychological impact of messages and as it relates
20 to the kind of model that we are talking about. 01:01 PM
21 So I would basically leave that to other
22 people to talk about just what the practices were,
23 and I can talk about the impact of messages from my
24 prospective.
25 Q. You mentioned earlier that if asked a 01:01 PM
111
1 question about whether you believed Philip Morris 01:01 PM
2 intended to target youth with its advertising you
3 would have an answer to that question; is that
4 right?
5 A. Well, I have an opinion about it. 01:01 PM
6 Q. I'm going to go in -- I want to know what
7 is the basis for your opinion?
8 A. Well, I believe that Philip Morris and
9 other companies have to recruit new smokers. And
10 they spend a lot of money on advertising and 01:02 PM
11 promotion. And while I know that they say that that
12 is only for brand switching and brand loyalty, I
13 also believe that they need to reach people, young
14 people and attract them to using the product;
15 otherwise, there will be less and less smoking. 01:02 PM
16 Q. Okay. So you've listed by my count two
17 bases for your opinion that Philip Morris targeted
18 youth. One is that Philip Morris has to recruit new
19 smokers so they need to reach youth with their
20 marketing. And No. 2 is Philip Morris spends a lot 01:03 PM
21 of money on advertising and promotion.
22 Are there any other reasons why you say
23 Philip Morris targeted youth?
24 A. Well, I believe in the past they did or
25 had research done for them which helped them 01:03 PM
112
1 identify the kinds of themes that would appeal to 01:03 PM
2 young people. And that they built that in to their
3 advertising marketing campaigns and they did a lot
4 of promotional work aimed at young people.
5 But that is not my specialty. And I'm not 01:03 PM
6 going to testify in any detail about exactly what
7 was done. I assume that there will be other people
8 to speak to that.
9 Q. Okay. But until I know for sure that you
10 are not going to speak of it, I have to ask you 01:03 PM
11 these questions. What is your basis for saying that

12 Philip Morris researched themes that would appeal to
13 youth and built those themes into their marketing
14 campaign?
15 A. Well, the documents that I looked at which 01:04 PM
16 are not all Philip Morris documents, I'm sure, show
17 kind of a general tendency on the part of the
18 companies to do this type of research, market
19 research. It makes sense to do that. If you are
20 going to invest a lot of money in advertising and 01:04 PM
21 promotion it makes obvious sense to do this type of
22 work to figure out what you are going to say and to
23 evaluate the impact that it has.
24 So this is going on in the industry as a
25 whole, so I am just assuming that Philip Morris is 01:05 PM
113
1 not different in that regard. 01:05 PM
2 Q. Okay. Any other basis for saying that
3 Philip Morris researched themes that appealed to
4 youth and built those themes into its marketing
5 campaigns? 01:05 PM
6 A. Well, I think the -- excuse me -- the
7 advertising that I've seen by all of the tobacco
8 companies tend to then play out these themes in the
9 images that they convey. So I'm going to have to
10 assume that there is a strategy behind that. It 01:05 PM
11 seems that there is from the documents. It seems to
12 be reflected in them. So that is the basis of my
13 opinion.
14 And then knowing, then, what I know about
15 how affect and imagery impact people, I think this 01:06 PM
16 is the kind of thing that would be very effective in
17 influencing young people.
18 Q. Do you have any other basis for your
19 opinion?
20 A. No. 01:06 PM
21 Q. Okay. When you talk about documents are
22 you applying any other expertise to the documents
23 other than reading and interpreting them?
24 A. No.
25 Q. Okay. And the advertising that tends to 01:06 PM
114
1 play out these themes using images, now, I want you 01:06 PM
2 to assume Philip Morris was only targeting adults
3 not youth with its advertising. In your opinion
4 would they still likely use images, these same types
5 of images in their advertising? 01:06 PM
6 A. To the extent that they were targeting
7 adults and not young people? Yeah?
8 Q. Right.
9 A. Would they use what?
10 Q. The same type of ads that they used in 01:07 PM
11 reality?
12 A. I don't know. I would have to do an
13 analysis on specific ads and imagery to answer the
14 question. It's my sense that there is literature
15 out there that does examine that imagery and 01:07 PM
16 concludes that its imagery that is perhaps more
17 central to young people than to adults.
18 So if they were only targeting adults, I
19 guess they might use different images, but I
20 don't -- 01:08 PM
21 Q. You don't know?
22 A. I don't know specifically.

23 Q. So would you agree that just looking at
 24 the images in the ads themselves does not give you a
 25 basis for saying one way or another whether Philip 01:08 PM
 115

1 Morris targeted and intended to target youth in its 01:08 PM
 2 advertising?

3 A. I would rather leave that to specialists
 4 in advertising.

5 Q. Okay. Let's look at your federal report 01:08 PM
 6 which is marked as No. 4. Here it is for you. You
 7 may want to keep that by you because I'm going to
 8 refer to it every now and again.

9 Let's look at Paragraph 18, which is on
 10 Page 9. In particular I want to direct you to sort 01:08 PM
 11 of the last half sentence of that Paragraph 18,
 12 which says:

13 "Companies were advised to use reassuring
 14 pictures, not words, images not
 15 information." 01:09 PM

16 Again, that's your opinion; right? That
 17 remains your opinion?

18 A. Yes.

19 Q. And when you are talking about images,
 20 what do you mean by images here? 01:09 PM

21 A. Well, in this particular sentence it
 22 distinguishes images from words. So this is
 23 referring to visual imagery. I use -- I think of
 24 imagery in a slightly broader sense to include
 25 words. 01:10 PM
 116

1 Q. Okay. But in this you are talking about 01:10 PM
 2 pictures here when you are talking about images?

3 A. Yeah, pictures.

4 Q. And you have in the sentence that they
 5 were advised to use images not information, what do 01:10 PM
 6 you mean by information?

7 A. Oh, sentences about the characteristics of
 8 the particular product. It might be anything that
 9 would have tar and nicotine content, for example.

10 Q. And is it your opinion that Philip Morris 01:10 PM
 11 and other tobacco companies followed this advice
 12 that they were given?

13 A. It is my impression that tobacco
 14 advertising has rather little of this type of
 15 information in it. It really is mostly words and 01:11 PM
 16 visual images.

17 Q. And the tobacco advertising that you've
 18 reviewed and that form the basis for your opinion
 19 are advertisements that use, in your words,
 20 reassuring pictures, not words, images not 01:11 PM
 21 information?

22 A. Well, I see them use words, too.

23 Q. What words have you seen in
 24 advertisements?

25 A. "Natural" is a major one. "Light" is 01:11 PM
 117

1 another one. "Alive with pleasure." 01:11 PM

2 Q. Would you differentiate those types of
 3 words from what you were talking about earlier when
 4 you were talking about information?

5 A. Yes. 01:12 PM

6 Q. Okay. And those words, in your opinion,
 7 are not information as you use the term in this

8 sentence?

9 A. Pretty much so, yes.

10 Q. I just want to go back a second to the 01:12 PM

11 documents you cite in your federal expert report.

12 You couldn't sit here today and tell us which one of

13 those documents are Philip Morris documents; is that

14 right?

15 A. Well, they probably have certain Bates 01:12 PM

16 numbers, but I know that the one starting with 5 are

17 Reynolds, I don't know what the federal numbers are.

18 Q. So the answer is, no, you can't do that?

19 A. No.

20 Q. Can you -- have you reviewed any Philip 01:13 PM

21 Morris advertisements that contains information as

22 you defined the term earlier?

23 A. Not specifically, no.

24 Q. And you have no recollection of reviewing

25 any such advertisements; correct? 01:13 PM

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1 A. No, sir. 01:13 PM

2 Q. Now, when you offer your opinion on the

3 affect of cigarette advertisements on affect the

4 advertisements you are talking about are ads

5 containing these images and not information; 01:13 PM

6 correct?

7 A. Yes.

8 Q. When did Philip Morris and the other

9 tobacco companies run these image-based ads that

10 form the basis of your opinion? 01:13 PM

11 A. I don't know the specific dates.

12 Q. You don't know whether they were in the

13 '50s, '60s, '70s, '80s, '90s or 2000s?

14 A. Well, I think they've been doing this for

15 a long time. I don't know when it started. 01:14 PM

16 Q. And you don't make any distinction based

17 on when the advertisements were run?

18 A. I'm not looking at that.

19 Q. Now, it's your opinion, is it not, that

20 cigarette advertising creates positive feelings 01:14 PM

21 about smoking by associating smoking with positive

22 qualities?

23 A. Yes.

24 Q. For instance, it's your opinion that

25 cigarette advertising associates smoking with 01:14 PM

119

1 qualities like contentment? 01:14 PM

2 A. Well, the image for contentment is a

3 little vague in my mind. It's possible, I suppose.

4 I don't know if that is the dominant one or not.

5 Q. How about glamor? Do cigarette 01:15 PM

6 advertising create or associate smoking with glamor?

7 A. Yes.

8 Q. How about romance?

9 A. Yes.

10 Q. Youth? 01:15 PM

11 A. Yes.

12 Q. Happiness?

13 A. Yes.

14 Q. Physical health and well-being?

15 A. Yes. 01:15 PM

16 Q. Now, you know that every cigarette

17 advertisement after 1965 has included the health

18 warning mandated by the U.S. Congress?

19 A. Yes.

20 Q. And don't these health warnings make it 01:15 PM
 21 clear to smokers that smoking can cause serious
 22 disease and even kill you?

23 A. Yes, they vary in what the wording is, but
 24 they say things like that, yes.

25 Q. And smokers when they read those warnings 01:15 PM
 120
 1 understand that message; right? 01:16 PM

2 A. Well, depends on what you mean by
 3 "understand."

4 Q. What do you mean when you talk about
 5 whether or not somebody understands the risks of 01:16 PM
 6 smoking, what do you mean by "understand"?

7 A. First, they have to attend to the message,
 8 they have to take it in. Then the question is,
 9 well, what if they do take it in, how does that play
 10 off against the other messages of the ad? I mean, 01:16 PM
 11 you've got this vivid image of healthy people having
 12 fun and you've got these words which are rather --
 13 they are always there. They don't vary very much,
 14 if at all. They are not very interesting to look
 15 at. And they basically tell you something that you 01:17 PM
 16 know is a general fact that smoking is harmful.

17 So in terms of the attention, one would,
 18 based upon what we know about attention, the imagery
 19 is likely to get more attention. The message is not
 20 -- is something that they are aware of and then 01:17 PM
 21 whether they understand the meaning, I mean, that is
 22 kind of what I dispute in my analysis is that there
 23 are ways in which people fail to appreciate what
 24 that real meaning behind that message is.

25 Q. Is it your opinion that Philip Morris and 01:17 PM
 121
 1 other tobacco companies through their advertising 01:17 PM
 2 then uses visual images neutralizes the effect of
 3 federally mandated warning labels?

4 A. I think that the advertising can do that,
 5 yes. 01:18 PM

6 Q. Do you think that the advertising, in
 7 fact, does that?

8 A. I think it does, yes.

9 Q. And does that -- your opinion on the
 10 effect of the images vis-a-vis the warning labels 01:18 PM
 11 form a basis of your opinions on the effect of
 12 cigarette advertising on people's decisions to smoke
 13 or not to smoke?

14 A. Would you repeat that question, please.

15 Q. Sure. Your conclusion that the images in 01:18 PM
 16 advertising neutralizes the effectiveness of the
 17 warnings, does that conclusion form a basis for your
 18 opinions on the effect of cigarette advertising on
 19 people's decisions to smoke?

20 A. I think that contributes to my opinion. 01:18 PM

21 Q. Okay. Let's look back at your federal
 22 report, Paragraph 9 of Exhibit 4. If you look at
 23 the section on Page 5, the sentence that begins
 24 "Marketing and advertising." And I will read the
 25 sentence. 01:19 PM
 122

1 "Marketing and advertising specialists 01:19 PM
 2 have long exploited the power of
 3 affect in decision-making."

4 Do you see that?

5 A. Yes. 01:19 PM

6 Q. And that represents your opinion; right?

7 A. Yes.

8 Q. What do you mean here by "exploited"?

9 A. Taken advantage of.

10 Q. And how have these specialists taken 01:19 PM

11 advantage of the power of affect in decision-making?

12 A. By studying the messages that create

13 affective feelings and, you know, utilizing those

14 messages -- using the knowledge of their own market

15 research to design messages that carry strong 01:20 PM

16 affective communications.

17 Q. In your opinion, is there anything wrong

18 with that?

19 A. Not necessarily.

20 Q. And can you identify any product 01:20 PM

21 manufacturer that does not, using your words,

22 exploit the power of affect in decision-making?

23 A. Well, to the extent that they are trying

24 to sell their products, marketers sell their

25 products, I think, you know, people who advertise 01:21 PM

123

1 that is their intention, yes. 01:21 PM

2 Q. And you can't think of any company that

3 doesn't do that; right?

4 A. In their advertising?

5 Q. Right. 01:21 PM

6 A. That doesn't --

7 Q. That does not try to exploit the power of

8 affect in decision-making?

9 A. In their advertising?

10 Q. Correct. 01:21 PM

11 A. Oh, I can't think of anything right now.

12 Q. Okay. Let's move on to Paragraph 11 in

13 Exhibit 4 which is your federal report. This is --

14 I'm looking on Page 6. Specifically the last

15 sentence in that paragraph. You say: 01:22 PM

16 "Even the 'mere exposure' provided by

17 repeatedly viewing cigarette

18 advertising or even just the brand

19 name is likely to create positive

20 affect thus enhancing one's 01:22 PM

21 attraction to smoking and the

22 brand and also depressing the

23 perception of risk."

24 Now, is it your opinion that people have

25 positive feelings about smoking? 01:22 PM

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1 A. Some do. 01:22 PM

2 Q. And which ones? Who has positive feelings

3 about smoking? Is there any particular demographic

4 category of people?

5 MR. PIUZE: The manager and director of 01:22 PM

6 Arnold & Porter.

7 MR. McCARTER: I'll ask him.

8 THE WITNESS: I think smokers have

9 positive feelings.

10 BY MR. McCARTER: 01:22 PM

11 Q. Do all smokers have positive feelings?

12 A. Well, feelings come and go. There are a

13 mix -- I mean, you know, I don't know the outlying

14 answer to that.

15 Q. We'll use a phrase you use in this 01:23 PM
16 sentence "positive affect." Do all smokers have
17 positive affect with respect to smoking?
18 A. I don't know.
19 Q. Do you know if most smokers have positive
20 affect with respect to smoking? 01:23 PM
21 A. Well, again, when is the key -- is a key
22 factor. Clearly, the smokers who we talk to about
23 would you do it again, have predominantly negative
24 affect. It doesn't mean they don't have some
25 positive feelings, but their feelings are 01:24 PM
125
1 predominantly negative. On Bates "The Picture of 01:24 PM
2 Misery," for example, is among smokers and it's
3 mostly negative. But these are people who, you
4 know, don't want to be smoking, but somehow cannot
5 stop. 01:24 PM
6 Q. Is there some type of technique that you
7 use in your research to measure whether a person has
8 positive affect or negative affect toward a
9 particular activity?
10 A. There is a variety of techniques, but one 01:24 PM
11 that we've used is to ask people to free associate
12 to stimulus.
13 Q. And do you consider that to be a valid
14 technique of measuring whether someone has positive
15 or negative affect about a particular activity? 01:24 PM
16 A. I think it's an informative technique.
17 Q. I'm trying -- I might have the phrase
18 wrong, but is there something you've done called
19 Imagery Analysis? Is that the right phrase?
20 A. We have done something called image 01:25 PM
21 analysis.
22 Q. What is image analysis?
23 A. We've asked people to free associate to
24 something.
25 Q. Is image analysis simply a form of free 01:25 PM
126
1 association? 01:25 PM
2 A. It relies on a free association and then
3 we often ask people to then go back and code or
4 categorize the images as being positive or negative.
5 Q. Do you consider image analysis to be a 01:25 PM
6 valid technique for estimating whether somebody has
7 positive or negative affect?
8 A. Yes.
9 MR. McCARTER: We'll mark another exhibit
10 here. 01:26 PM
11 (Defendant's Exhibit 9 was
12 marked for identification and is
13 annexed hereto.)
14 BY MR. McCARTER:
15 Q. Dr. Slovic, can you identify Exhibit 9 for 01:26 PM
16 us, please.
17 A. It's a paper called "Imagery Affect in
18 Financial Judgment."
19 Q. And this was published in 2000?
20 A. Yes. 01:26 PM
21 Q. And you are the second author listed here;
22 is that right?
23 A. Yes.
24 Q. That means you had some role in the
25 writing of this paper? 01:26 PM

127
01:26 PM

1 A. Yes.

2 Q. Now, what did you do in this paper? What
3 were you studying?

4 A. We were studying people's images and
5 affective feelings towards initial public offerings
6 of stock. 01:27 PM

7 Q. And how did you go about measuring those
8 feelings?

9 A. We gave people names of industry groups
10 and we asked for the first three thoughts or images
11 that come to mind when you think about a particular
12 industry. People gave those thoughts and then they
13 later rated each image on a scale from going to
14 highly negative to highly positive. 01:27 PM

15 Q. Was that a valid technique of measuring
16 people's feelings towards these different companies? 01:27 PM

17 A. I believe it is, yes.

18 Q. And in this study you measure the affect
19 associated with 40 different types of companies?

20 A. Yes. 40 different industry groups or
21 companies. 01:28 PM

22 Q. I think you are right. I think it's
23 industry groups. And one of the industry groups
24 that you looked at was the tobacco industry; right?

25 A. I don't know. Can't remember. 01:28 PM

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01:28 PM

1 Q. I'll direct you to Page 107, the second
2 paragraph under the heading "Results." Do you see
3 that?

4 A. Yes.

5 Q. So the tobacco industry was one of the
6 industries about which you measured affect? 01:28 PM

7 A. Yes. Right.

8 Q. And you found out of all 40 companies you
9 looked at only four had negative affect associated
10 with them? 01:29 PM

11 A. No, it would be an over all average.

12 Q. I'm sorry?

13 A. It would be probably average on the
14 negative side indicating that there was also
15 positive, but it means the average was on the
16 negative side of the scale. 01:29 PM

17 Q. And out of all 40 companies you found only
18 four that had an average affect that was negative;
19 correct?

20 A. Yes. 01:29 PM

21 Q. And one of those companies that had a
22 negative affect was -- one of the industries that
23 had a negative affect associated with it was the
24 tobacco industry?

25 A. Yes. 01:29 PM

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01:29 PM

1 MR. McCARTER: We're done with this at
2 least for now. Another one, No. 10.
3 (Defendant's Exhibit 10 was
4 marked for identification and is
5 annexed hereto.) 01:30 PM

6 BY MR. McCARTER:

7 Q. Dr. Slovic, will you identify Exhibit 10
8 for us, please.

9 A. It's a paper titled "Imagery Affect in
10 Decision-making? 01:30 PM

11 Q. And what were you studying here?

12 A. It's kind of an overview paper that I

13 think is a predecessor to the later paper on "The

14 Affect Heuristic."

15 Again, this is dated 1998 or so. And it 01:30 PM

16 probably describes the IPO study that we just talked

17 about.

18 Q. Are you sure about that?

19 A. No, I'm just trying to remember what

20 this -- well, it describes several studies relating 01:31 PM

21 to imagery and affect to judgment.

22 Q. Okay. If you look at Page 17, one of the

23 studies that you conducted or at least summarized

24 was on "Adolescent Images: Health Threatening and

25 Health Enhancing Behaviors." Correct? 01:31 PM

130

1 A. Yes. Right. 01:31 PM

2 Q. And you asked in that survey 411 people to

3 give you word association images to the different

4 health threatening or health enhancing behaviors;

5 correct? On Page 19? 01:31 PM

6 A. Yes. Yes.

7 Q. And, in fact, you found that all of the

8 behaviors were associated with positive affect

9 except for -- strike that. You found no positive

10 affect associated with cigarette smoking in this 01:31 PM

11 article; correct?

12 A. No. I don't believe so. I don't believe

13 that is correct. I believe that we did find

14 positive affect of cigarette smoking.

15 Q. Do you describe that finding anywhere in 01:32 PM

16 the article, to your knowledge?

17 A. In this article? No. But, I mean there

18 is an article on this, published article on this.

19 Q. Okay. We may see that one next. Let me

20 direct your attention to Table 39 -- or I'm sorry. 01:32 PM

21 It's Table 9 on Page 39. And in that table you set

22 forth some of your analysis of the data that you

23 collected in the survey; correct?

24 A. Yes.

25 Q. And I notice under -- for every activity 01:32 PM

131

1 you are talking about, every behavior except for 01:32 PM

2 two, you have a positive image score listed; is that

3 right?

4 A. Right.

5 Q. You do not have a positive image score 01:33 PM

6 listed for cigarettes or for seatbelt use. And my

7 question for you is why not?

8 A. Because in the regression analysis that we

9 did the measures of positive imagery did not

10 differentiate the groups of participants and 01:33 PM

11 nonparticipants that we were looking at.

12 Q. Okay. So there was no -- the smokers and

13 the nonsmokers you were looking at didn't have any

14 difference in their positive image score?

15 A. Well, as I recall, they did have 01:33 PM

16 differences. So I'm not sure why that didn't

17 load -- when you do regression, you have multiple

18 measures and what comes out is a function of the

19 intercorrelations of the predictor variables and

20 there may have been something about the 01:34 PM

21 intercorrelation pattern that lead to the

22 predictability being sopped up by the negative image
23 score.
24 But as I recall, there was a difference
25 between smokers and nonsmokers in the balance of 01:34 PM
132
1 positive and negative imagery. 01:34 PM
2 Q. Okay. But when you controlled for these
3 different variables that you controlled for in your
4 regressive analysis, after you -- controlling for
5 these variables there was no difference between the 01:34 PM
6 smokers and nonsmokers in terms of their positive
7 imagery score; is that right?
8 A. No. I mean, it did not enter into the
9 prediction equation, but the prediction equation is
10 a funny thing the way that it selects out based on 01:35 PM
11 inner relationships. So it may be that there was
12 some relationship between positive and negative
13 imagery. The fact that the people with more
14 positive had less negative that made them -- if they
15 go together, for example, as affect heuristic 01:35 PM
16 predicts, then once you put one in, you don't need
17 the other because they are linked.
18 And I think that is what comes out in the
19 regression. The better analysis of this would be in
20 the published version of this paper. 01:35 PM
21 Q. Well, let's turn to that. Actually, I
22 think what I have next is not that study, but we may
23 come to it, just let me know if we do.
24 (Defendant's Exhibit 11 was
25 marked for identification and is
133
1 annexed hereto.)
2 BY MR. McCARTER:
3 Q. All right. Dr. Slovic, can you identify
4 Exhibit 11 for us, please.
5 A. It's a paper on "Adolescent Health 01:36 PM
6 Threatening and Health Enhancing Behaviors."
7 Q. And what did you study in this paper?
8 A. It's the same study that is referred to in
9 the other document.
10 Q. This, however, is -- is this -- let me is 01:37 PM
11 ask this: Is this the published version of the
12 document that we were just looking at?
13 A. Yes.
14 Q. Oh, it is. I just noticed there are
15 different authors listed on Exhibit 10 than are on 01:37 PM
16 Exhibit 11.
17 A. Right, because this is not a report of
18 specific study, it's an overview of several
19 different studies and it's a different paper.
20 Q. Okay. Why don't we following up on what 01:37 PM
21 we talked about with Exhibit 10, can we turn to
22 Page 149, Table 4, please. You say there that you
23 still did not have the positive image score for
24 cigarettes; is that right?
25 A. I imagine that is the same table we just 01:37 PM
134
1 looked at. 01:37 PM
2 Q. I thought you were indicating that the
3 published article might shed some light on what
4 happened in the regression analysis that you record
5 in this table. Does this give you anything to add 01:37 PM
6 to your previous answer about why there was not a

7 positive image score listed for cigarette smoking?
8 A. No, this is the same table we just looked
9 at.
10 Q. Now, in this article, just like the last 01:38 PM
11 study, you were measuring affect associated with
12 risk-related behaviors; correct?
13 A. Yes.
14 Q. And one of those risk-related behaviors
15 that you looked at was cigarette smoking; right? 01:38 PM
16 A. Yes.
17 Q. And was cigarette smoking associated with
18 positive affect?
19 A. Yes.
20 Q. And is there any way that I can find that 01:38 PM
21 conclusion in the article?
22 A. Look at Figure 1.
23 Q. Okay. Now, cigarette smoking was also
24 associated with a lot of negative affect, was it
25 not? 01:39 PM
135
1 A. Yes. 01:39 PM
2 Q. And if you would look on Page 149 under
3 "Affect and Behavior" the heading there?
4 Q. Um-hum. Toward the bottom or the middle of
5 the paragraph it says: 01:39 PM
6 "Negative ratings were stronger predictors
7 for cigarette smoking and seatbelt
8 use."
9 And that was something that was not true
10 of many of the other activities; is that correct? 01:39 PM
11 A. Yes.
12 Q. And now on page -- on Page 147 under the
13 heading "Similarity of Associations Across Different
14 Health Threatening Behaviors" -- do you see that?
15 A. Um-hum.
16 Q. The first paragraph under that says:
17 "The content analysis showed that as
18 predicted the various health
19 threatening behaviors despite
20 their different nature had similar 01:40 PM
21 outcome associations. For
22 example, all five risk behaviors
23 were associated with having fun,
24 social facilitation, physiological
25 arousal and health and physical 01:40 PM
136
1 relaxation. Furthermore, all 01:40 PM
2 health threatening behaviors with
3 the exception of cigarette smoking
4 were associated with positive
5 affect, e.g., feeling good, being 01:40 PM
6 in a good mood and feeling happy."
7 Now, here you seem to be saying that
8 cigarette smoking was not associated with positive
9 affect; correct?
10 A. Defined as images coming out feeling good 01:40 PM
11 and being in a good mood or feeling happy.
12 Q. In this study cigarette smoking was not
13 associated with feeling good; correct?
14 A. We have positive outcomes and positive
15 concepts. We differentiate between concepts and 01:41 PM
16 outcomes. And I don't know quite why this is worded
17 this way, but if you look at Figure 1 --

18 Q. What page is that on?
19 A. Which is on the next page, you see that
20 overall that frequent cigarette smoking is much more 01:42 PM
21 linked -- there is relatively higher proportion of
22 positive concepts and positive outcomes among the
23 frequent smokers than among the nonsmokers. And
24 although there is among frequent smokers there is a
25 mix of positive and negative affective responses, 01:42 PM
137
1 and among the never smokers there is little or no 01:42 PM
2 positive material.
3 Q. So is it your testimony that this
4 statement is inaccurate that all health threatening
5 behaviors with the exception of cigarette smoking 01:42 PM
6 were associated with positive affect?
7 A. I don't understand the statement as here.
8 I would have to try to reconstruct what led to that
9 in light of the fact that if you look down at
10 Table 3 you see under cigarettes you see fun, 01:43 PM
11 pleasure, social facilitation, relaxation, some
12 arousal. So these are among the dominant concepts
13 there. So I'm not -- I can't reconstruct exactly
14 why that sentence was framed that way given what the
15 data show. 01:43 PM
16 Q. So you can't tell us one way or the other
17 whether that sentence is actually an accurate
18 sentence?
19 A. Well, I think it doesn't jive with the
20 data that is presented. It might have to do with 01:43 PM
21 how any kind of grouping that was done between
22 frequent and infrequent participants in an activity,
23 they were different. These were young people. Some
24 of them had very minimal participation in an
25 activity. And others more frequent. Figure 1 deals 01:44 PM
138
1 with frequent versus never. 01:44 PM
2 Q. In Table 3 you present different estimates
3 for social outcomes, physical outcomes, emotional
4 outcomes and other outcomes for each of the
5 activities; correct? 01:44 PM
6 A. Yes.
7 Q. And positive affect is a specific
8 subcategory listed under emotional; right?
9 A. Yes.
10 Q. And on the line, if you go across, 01:44 PM
11 cigarette smoking is the only one of all of the
12 health threatening behaviors that doesn't have a
13 number there; correct?
14 A. I'm sorry. Doesn't have a number where?
15 Q. In the row for positive affect. 01:45 PM
16 A. Oh. Okay. I see what is going on here
17 now. This is a category that is labeled emotional
18 and it refers to specific types of words where they
19 actually volunteer associations such as feeling
20 good, happy. So it's a subcategory of positive 01:45 PM
21 imagery which is in general not, you know, as
22 frequently evoked by this imagery set compared to
23 other positive affective types of images.
24 Q. So this positive affect category was
25 created using the free association technique? 01:46 PM
139
1 A. Yes. Free association technique was 01:46 PM
2 done -- that was the method and what you get is you

3 get a lot of words, and then you have to decide how
4 to categorize those words. So here -- and that's --
5 the words are, you know, you could categorize them 01:46 PM
6 as positive and negative, but then you could also
7 try to do some content analysis and we looked at
8 social content, physical content, emotional content.
9 And the emotional content, as was indicated, in
10 specific emotion words. 01:46 PM

11 Q. Okay. Using the free association
12 technique that you used to estimate this category
13 that you labeled positive affect, you found that
14 cigarette smoking was the only behavior out of the
15 five that you studied that did not have a positive 01:47 PM
16 affect associated with it; correct?

17 A. It's the only one that is listed here that
18 didn't have a percentage and didn't have any of
19 those positive words.

20 Q. But also in the text you say it was the 01:47 PM
21 only one that didn't have positive affect associated
22 with it?

23 A. In that sense, yes.

24 Q. Okay. If you look two paragraphs below
25 the one we were looking at that started with 01:47 PM
140

1 "Content analysis," there is a paragraph that starts 01:47 PM
2 with "Negative outcomes." And if you look at the --
3 I think it's the fourth full sentence it says:
4 "For smoking cigarettes, disease, social
5 stigma and feeling sick were the 01:47 PM
6 major associates followed by
7 addiction and death."
8 Do you see that?

9 A. Yes.

10 Q. So smoking was associated with disease; 01:47 PM
11 correct?

12 A. Um-hum.

13 Q. And it was associated with social stigma;
14 correct?

15 A. Correct. 01:47 PM

16 Q. And it was associated with feeling sick;
17 correct?

18 A. Yes.

19 Q. And it was associated with addiction;
20 correct? 01:48 PM

21 A. Um-hum.

22 Q. And cigarette smoking was associated with
23 death; right?

24 A. Yes.

25 Q. We're done with this one. I want to go 01:48 PM
141

1 back to our causal model that we talked about 01:48 PM
2 earlier. It's your opinion that -- and this is
3 Exhibit 8. It's your opinion that cigarette
4 advertising using images is correlated with having
5 positive feelings about smoking; is that right? 01:48 PM

6 A. Yes.

7 Q. And can you tell me on what you rely for
8 that, for your conclusion that image-based cigarette
9 advertising is associated with positive feelings
10 about smoking? 01:48 PM

11 A. Let me see the -- I think it's a
12 combination of studies, wide range of material
13 showing that the advertising and marketing people

14 designed advertising in order to create positive
15 feelings in the recipient of the advertising. 01:49 PM
16 I think this is standard in advertising
17 practice which is relies heavily on the notion of
18 image and affect analysis, just kind of basic
19 advertising theory and design. I think that we find
20 that there is a difference between young people who 01:50 PM
21 smoke and young people who don't smoke and the
22 amount of positive imagery that they evoke and that
23 doesn't necessarily just mean saying some positive
24 word like "happy," but it also means other kinds of
25 positive thoughts. They do differ. There is 01:50 PM
142
1 material in the Annenberg work that shows an 01:50 PM
2 importance of feelings and images and trial and
3 initiation.
4 Q. Let me just stop you right there. What
5 I'm asking you about is the relationship between 01:50 PM
6 cigarette advertising and positive affect not the
7 relationship between positive affect and smoking
8 initiation.
9 A. Okay.
10 Q. In light of that let me just mention the 01:50 PM
11 things you've mentioned so far. The first thing you
12 mentioned was that advertising people design their
13 advertising to create positive feelings. That was
14 the first thing you said.
15 The next thing you said was the difference 01:51 PM
16 between smokers and nonsmokers and the amount of
17 positive imagery that they evoke. Now, that
18 category of information doesn't answer the question
19 about the relationship between cigarette advertising
20 and positive affect; correct? 01:51 PM
21 A. Um-hum.
22 Q. You would agree with me?
23 A. Um-hum.
24 Q. You have to say it.
25 A. Yes. 01:51 PM
143
1 Q. And then you were talking about the 01:51 PM
2 Annenberg Surveys, is there anything in the
3 Annenberg surveys that supports your opinion that
4 cigarette advertising causes a positive affect in
5 people? 01:51 PM
6 A. There might be, but I am not -- I wouldn't
7 rely on Annenberg surveys for that statement.
8 Q. Why not?
9 A. It's my -- because they weren't really
10 design to go into detail about advertising exposure. 01:51 PM
11 Q. Okay. Is there anything else that
12 supports your opinion that cigarette advertising
13 caused positive affect in people?
14 A. I think this is basically what I said,
15 this is the premise of advertising, the advertising 01:52 PM
16 industry. This is what it's designed to do is to
17 link positive features and concepts to a product.
18 Q. Just because it's the premise of the
19 advertising industry, doesn't mean that --
20 A. Well, I think it has --
21 Q. Please, let me finish?
22 A. Okay.
23 Q. Just because it is the premise of the
24 advertising industry, doesn't mean that the

25 advertising industry actually accomplishes what it's 01:52 PM
144

1 seeking out to do? 01:52 PM

2 A. It may not accomplish that.

3 Q. Is there any other basis for your
4 conclusion that cigarette advertising using positive
5 images creates a positive affect in people? 01:52 PM

6 A. Not directly, no.

7 Q. And you said that advertising people
8 design advertising to create positive feelings. And
9 I want to know what are you relying upon for that
10 opinion that that is what advertising people do? 01:53 PM

11 A. Well, that is what they say they do.

12 Q. And where do they say that?

13 A. They say that in books, articles and also
14 it's in the documents that I cite in my report.

15 Q. Are there any books that you can point me 01:53 PM
16 to specifically on this subject?

17 A. Oh, look at "The Want Makers."

18 Q. How do you spell that?

19 A. W A N T, M A K E R S.

20 Q. Okay. Any others? 01:53 PM

21 A. Oh, look at "The Hidden Persuaders." Off
22 the top of my head, I can't give you other titles.

23 Q. Okay. I read earlier into the record a
24 statement that you make at the end of Paragraph 12
25 of your federal report which we have marked as 01:54 PM
145

1 Exhibit 4. And that statement says: 01:54 PM

2 "Even the mere exposure provided by
3 repeatedly viewing cigarette
4 advertising is likely to create
5 positive affect." And it goes on. 01:54 PM

6 Now, what is mere exposure?

7 A. It is the presence of a stimulus. Well,
8 exposure to -- it's just a stimulus being there.
9 It's being available to a person as opposed to
10 something which is forced into your -- you know, 01:54 PM
11 forced into the center of your attention.

12 Q. How are things forced into -- so I
13 understand, how are things forced into your center
14 of attention?

15 A. Well, things that you concentrate on you 01:55 PM
16 attend to consciously. Mere exposure is just being
17 in the presence of something where you may not even
18 be attending to it consciously. So it's a lesser
19 degree of exposure. That doesn't mean that nonmere
20 exposure isn't also influential, but even this lower 01:55 PM
21 level of exposure can be influential.

22 Q. And it's your belief that mere exposure
23 creates positive affect in people generally?

24 A. Yes.

25 Q. And one of the studies that you rely upon 01:55 PM
146

1 for that opinion is the study by a researcher named 01:55 PM
2 Borenstein; is that right?

3 A. Yes.

4 MR. McCARTER: I'll have to get a copy of
5 this for you. Let's mark that one. 01:56 PM

6 (Defendant's Exhibit 12 was
7 marked for identification and is
8 annexed hereto.)
9 BY MR. McCARTER:

10 Q. Dr. Slovic, will you identify that for us, 01:56 PM
11 please.
12 A. It's a paper on "Meta-analysis of Exposure
13 and Affect."
14 Q. And this is an article that you rely upon
15 for your opinions in this case? 01:56 PM
16 A. It's an article on exposure, yes.
17 Q. And you rely on this article; correct?
18 A. Yes.
19 Q. Okay. And let's look at Page 267. The
20 right column, first full paragraph on the right. 01:56 PM
21 Borenstein writes --
22 A. Wait a second.
23 Q. You may find it underlined. Borenstein
24 writes:
25 "This review includes only experiments 01:57 PM
147
1 that investigate affect changes in 01:57 PM
2 response to mere, i.e.,
3 unreinforced exposure to visual
4 and auditory stimuli."
5 Is this Borenstein's definition of mere 01:57 PM
6 exposure as unreinforced exposure consistent with
7 your understanding of the term?
8 A. Yes, I think so.
9 Q. Okay. And what would it mean for an
10 exposure to be reinforced as opposed to 01:57 PM
11 unreinforced?
12 A. To be rewarded when you see something.
13 You are rewarded in the presence of this directly.
14 Q. Now, if you look at the first sentence in
15 the next paragraph it says: 01:58 PM
16 "Studies that include any type of
17 reinforcement introduced during
18 the exposure or reading phases of
19 the experiment are not included in
20 the meta-analysis to avoid 01:58 PM
21 contaminating the analysis with
22 experiments investigating
23 phenomenon other than unreinforced
24 stimulus exposure."
25 So Borenstein in his meta-analysis 01:58 PM
148
1 excluded in his studies that addressed reinforced 01:58 PM
2 exposure; correct?
3 A. That was his intent, yes.
4 Q. Well, do you have any reason to believe
5 that he actually didn't do it? 01:58 PM
6 A. I would have to look at all of these 206
7 studies that he discussed.
8 Q. Assuming that Borenstein actually
9 succeeded in excluding studies that involved
10 reinforced exposure, would you agree that the 01:58 PM
11 Borenstein meta-analysis does not speak to what
12 affects, if any, result from reinforced exposure?
13 A. Well, yes.
14 Q. And the affects that could result from
15 reinforced exposure could be different than the 01:59 PM
16 affects that result from mere exposure; correct?
17 A. Yes.
18 Q. Now, if you look at Page 271 there is
19 Table 5 at the bottom. And my question is:
20 Borenstein in his analysis focused on people's 01:59 PM

21 attitudes after their mere exposure not their
22 behaviors; correct?

23 A. Yes.

24 Q. And if you look on Table 7, which is the
25 next page at the bottom, Borenstein broke his 01:59 PM
149

1 analysis down into two different categories. He 01:59 PM
2 reported separate estimates for the size of the
3 exposure affect on children and the size of the
4 exposure affect on adults; correct?

5 A. Yes. 02:00 PM

6 Q. And for children he found that mere
7 exposure actually led to negative affect; correct?

8 A. Small, yes.

9 Q. But it's negative; right? It's
10 statistically significant; correct? 02:00 PM

11 A. Okay. Yes.

12 Q. Okay. And for adults he found that mere
13 exposure resulted in positive affect; correct?

14 A. Right.

15 Q. And that is the finding that you rely upon 02:00 PM
16 for your opinion, is it not?

17 A. This is the classified, yes.

18 Q. Nothing in Borenstein estimates the
19 direction or the size of the exposure affect in
20 adolescents, wouldn't you agree with that? 02:00 PM

21 A. I think that is correct. I was going to
22 check when he says children, what were the ages?

23 Q. I think it was an average age of twelve
24 and under.

25 A. So, yeah, there is a gap. 02:01 PM
150

1 Q. Have you seen any other studies besides 02:01 PM
2 Borenstein that estimate the affect of mere exposure
3 on adolescents?

4 A. Not directly, no.

5 Q. Given that Borenstein finds a negative 02:01 PM
6 affect for children and a positive affect for
7 adults, would you agree that it's unclear whether
8 the mere exposure creates positive affect in
9 adolescents?

10 A. You know, I would like to find what the 02:01 PM
11 ages were.

12 Q. If you look on Page 277 there is a heading
13 entitled "Age of subject." You may find your answer
14 there.

15 A. Um-hum. Right. Ages 6 to 11. And adults 02:02 PM
16 were ages 18 to 20.

17 Q. So in Borenstein --

18 A. And I found the stronger affect for adults
19 and child. By adult meaning 18 to 20. So clearly
20 there is a transition here between 6 to 11 and 18 to 02:02 PM
21 20 where exposure starts to -- this mere exposure
22 kicks in. So, obviously, there is a developmental
23 change there.

24 Q. And you don't know when that developmental
25 change occurred; correct? 02:03 PM
151

1 A. And I can't tell you exactly where it 02:03 PM
2 kicks in, no.

3 Q. So Borenstein -- or strike that. Would
4 you agree that it's unclear whether or not mere
5 exposure creates a positive affect in adolescents? 02:03 PM

6 A. What do you mean "unclear"?
7 Q. That you can't say one way --
8 A. That it's not a hundred percent exact?
9 Q. Let me rephrase. Would you agree that you
10 cannot offer an expert opinion that mere exposure 02:03 PM
11 creates positive affect in adolescents?
12 A. I would say that there is some uncertainty
13 about exactly when the affect kicks in.
14 Q. And, therefore, you cannot offer an expert
15 opinion that mere exposure creates positive affect 02:04 PM
16 in adolescents; correct?
17 A. There is no direct evidence. One would
18 have to think about the degree to which a 15, 16
19 year old person think more like an adult or more
20 like a child. I tend to think they are more like an 02:04 PM
21 adult, but, like I say, I don't have specific
22 evidence on that.
23 Q. Okay. So you don't have an expert opinion
24 that mere exposure creates positive affect in
25 adolescents? 02:04 PM
152
1 A. I think it probably does. I mean, this is 02:04 PM
2 the way -- for example, if we look at popular music
3 which is something that is marketed heavily to
4 adolescents, I think exposure is important. I think
5 it's likely that as you hear music repeated that you 02:05 PM
6 come to like it more up to a point where you begin
7 to dislike it. So my intuition is that it would
8 have this affect. I offhand can't see any reason
9 why this phenomenon, whatever it is that -- you have
10 to think why does mere exposure influence adults? 02:05 PM
11 Maybe there is some adaptive -- usually these
12 affective processes have the adaptive significance
13 evolutionary adaptation. Why if something is
14 important and is fundamental in the adult mind, why
15 wouldn't it also take place in an adolescent mind. 02:05 PM
16 And while I don't have direct evidence for that, I
17 have evidence that adolescents are really different
18 in that regard.
19 Q. Well, you know that from Borenstein that
20 whatever is happening in adults to create a 02:06 PM
21 positively affect does not happen in children;
22 correct?
23 A. Well, the studies are different. I would
24 imagine they are using very different stimuli for
25 children ages 6 to 11 than they do for adults. 02:06 PM
153
1 Q. Are you imagining that or do you know 02:06 PM
2 that?
3 A. Well, we can look at it. These are
4 classified. I would surmise that they are different
5 stimuli. You have to look at that. He looks at 206 02:06 PM
6 sets of studies, I believe.
7 Q. And you don't know whatever it is present
8 in children which causes them to have a negative
9 affect from mere exposure is also present in
10 adolescents as well? 02:06 PM
11 A. Correct. I'm sorry. Negative -- what
12 causes a negative reaction? I mean, the size of the
13 reaction in children is very small. It's only
14 significant because he's got a lot of studies. But
15 I don't see a reason why the phenomenon that is 02:07 PM
16 present in adults would not also extend to older

17 adolescents.

18 MR. PIUZE: I imagine I need a five-minute

19 break, may I?

20 MR. McCARTER: Yeah, let's take a break. 02:07 PM

21 (Recess taken.)

22 BY MR. McCARTER:

23 Q. Dr. Slovic, I just wanted to turn your

24 attention to Exhibit 11. I think it's in the stack

25 somewhere here. If you could look at the end of the 02:22 PM

154

1 article on Page 151. I would draw your attention to 02:22 PM

2 the last sentence of the article. It says in the

3 last sentence:

4 "For example, for years cigarette

5 companies have said that their ads 02:22 PM

6 are not designed to make smoking

7 more attractive to young people.

8 The imagery analysis presented

9 here provides a method for testing

10 the impact of such advertisement." 02:23 PM

11 Now, have you ever used your imagery analysis to

12 test the impact of such advertisement?

13 A. No.

14 Q. Would you agree that with respect to

15 cigarette smoking there are government and public 02:23 PM

16 health associations whose messages should create

17 negative feelings about smoking?

18 A. Yes.

19 Q. And would you agree that the well-known

20 association of cigarette smoking with cancer should 02:23 PM

21 create enough negative affect to stimulate a

22 powerful drive to avoid smoking?

23 A. Yes.

24 Q. And this powerful negative affect likely

25 convinces many people to never start smoking or to 02:24 PM

155

1 quit smoking once they have started? 02:24 PM

2 A. Yes.

3 Q. Have you studied the extent to which

4 anti-smoking messages by the government or others in

5 the public health community have had an impact on 02:24 PM

6 people's feelings about smoking?

7 A. Not directly.

8 Q. Have you done it indirectly?

9 A. I have seen a variety of studies, but I

10 haven't studied it. 02:24 PM

11 Q. Can you identify any of the studies that

12 you've seen?

13 A. On anti-smoking messages?

14 Q. Right.

15 A. And their impacts? I can't cite them. 02:24 PM

16 Q. I want to turn back to Exhibit 8 which is

17 the causal model that I drew and I want to talk

18 about the relationship that you believe exists

19 between positive affect and smoking initiation.

20 Okay? 02:25 PM

21 A. Okay.

22 Q. And it's your opinion, again, that

23 positive affect causes some people to start smoking;

24 right?

25 A. Yes. 02:25 PM

156

1 Q. Okay. Can you tell me all of the evidence 02:25 PM

2 or studies that support your opinion that positive
3 affect causes smoking initiation?

4 A. Well, let's look at it logically. You
5 don't have to look at experimental data for this. 02:25 PM
6 You have -- and initiation of smoking means taking
7 this thing called a cigarette and lighting it and
8 putting it in your mouth.

9 Now, if we have these two systems of, you
10 know, thinking and behavior operating the affective 02:25 PM
11 and the analytic, why would one expect that
12 analysis, that careful thought and analysis of what
13 you are doing would lead you to conclude that this
14 is a wise thing to do.

15 I can't, you know -- I can't think of much 02:26 PM
16 in favor of that explanation. So that leaves the
17 affective explanation.

18 Q. Are there any studies you can point me to
19 that establish a relationship between positive
20 affect and smoking initiation? 02:26 PM

21 A. As I said, I believe there are studies in
22 the literature that show that presmokers have more
23 favorable -- who have more favorable images of
24 characters in tobacco advertising are more likely to
25 go on and initiate smoking, but I don't have a 02:27 PM
157

1 specific reference to those studies. 02:27 PM

2 Q. Okay. Let's look at your federal expert
3 report Exhibit 4. You say in Paragraph 4 that
4 beginning smokers 'appear to be lured into' --

5 A. Paragraph? 02:27 PM

6 Q. Paragraph 4 on Page 2. You are talking
7 about beginning smokers and you say they appear to
8 be lured into the behavior by the prospects of fun,
9 excitement and adventure. And what is your basis
10 for that statement? 02:28 PM

11 A. Some of the materials from the tobacco
12 documents. Some of the statements from individuals,
13 for example, in the Daniels case who are talking
14 about why they started to smoke, but I think a lot
15 of it is in the -- in the tobacco documents. This 02:28 PM
16 is what they were finding out in their focus groups.

17 Q. Do you have any other sources from this
18 for this statement?

19 A. Well, I mean it is consistent with some of
20 the imagery that we got from Batini on the smaller 02:29 PM
21 scale study, but, you know, fun, pleasure, social
22 facilitation, arousal were some of the imagery
23 coming through in those studies.

24 Q. And that is in Exhibit 11?

25 A. Yes. 02:29 PM
158

1 Q. In Paragraph 12 -- I'm sorry to keep you 02:29 PM
2 jumping around here, but I'm trying to stay on the
3 same team. Paragraph 12 on Page 7 you say that --
4 you are talking about Viscusi here, and it's under
5 your fourth reason for disagreeing with his 02:29 PM
6 opinions.

7 You say: "And adolescents behaviors
8 appear to be driven primarily by
9 impulse and affect."

10 And you cite Slovic 2001. Slovic 2001 is 02:29 PM
11 your book on smoking; right?

12 A. Right.

13 Q. Can you show me where in that book you
14 find support for that statement or the particular
15 findings? And if -- 02:30 PM

16 A. I would say Chapter 6. That is what
17 Chapter 6 is all about.

18 Q. Let me point you to a couple things and
19 see if this is also what you are relying upon. If
20 you look on Page 68 toward the bottom. This is the 02:30 PM
21 chapter based on the Annenberg data.

22 It says: "This finding suggests that
23 classic risk beliefs are related
24 to feelings about smoking. Young
25 people disregard the risks of 02:30 PM
159

1 smoking when deciding to smoke
2 their first cigarette." 02:30 PM

3 Is that a finding that forms a basis for
4 your opinion in Paragraph 12?

5 A. No. 02:31 PM

6 Q. No, it's not?

7 A. I was referring to Chapter 6.

8 Q. Is there any particular part of Chapter 6
9 that you are referring to?

10 A. Well, starting on Page 110 the dominance 02:31 PM
11 of experiential thinking.

12 Q. Okay. Skipping ahead on some things.
13 Just bear with me, please. Back to your federal
14 report Exhibit 4. Paragraph 28 c you say that young
15 smokers are induced to smoke by images in the 02:32 PM
16 positive affect associated with them; correct?

17 A. Yes.

18 Q. And you do not say that young people
19 continue to smoke or don't quit smoking because of
20 positive affect associated with cigarette smoking;
21 correct? 02:33 PM

22 A. By induced to smoke, I mean, you know
23 starting and continuing. I mean, smoking is a
24 general activity.

25 Q. I want to talk about your opinions that 02:33 PM
160

1 smokers under appreciate the risks of disease. 02:33 PM
2 Paragraph 6 of the federal report you say that --
3 the first sentence --

4 "Appreciating the risks of smoking
5 means appreciating the nature of 02:33 PM
6 the consequences as well as the
7 likelihood of those consequences."
8 Right? That's your opinion?

9 A. Yes.

10 Q. Now, what would a person need to know in 02:34 PM
11 order to understand and appreciate the likelihood of
12 the consequences that smoking entails?

13 A. First of all, they would have to know what
14 the consequences were.

15 Q. Okay. What else would they need to know? 02:34 PM

16 A. They would have to have specific and very
17 well-presented information about the probability of
18 those consequences occurring as a result of smoking.

19 Q. Okay. Is there anything else that they
20 would need to know? 02:34 PM

21 A. To appreciate the likelihood of those
22 consequences.

23 Q. Isn't that the same as saying the

24 probability of the consequences?
 25 A. Right. I think those are the basic. 02:35 PM
 161

1 Q. Would a person in order to understand and 02:35 PM
 2 appreciate the likelihood of the consequences of
 3 smoking have to know all of the possible
 4 consequences of smoking?

5 A. I think that is a good question. I think 02:35 PM
 6 so, yes. But, you know, there are many, many
 7 consequences. You know, and it's probable you won't
 8 know all of the consequences, but I would say "yes,"
 9 to fully appreciate the risks of smoking they
 10 certainly need to know all of the major 02:35 PM
 11 consequences.

12 Q. And you also say that to fully understand
 13 and appreciate the risks of smoking the person would
 14 have to know the nature of the consequences. What
 15 would they have to know about the nature of the 02:36 PM
 16 consequences of smoking?

17 A. Well, as I say here, realistic knowledge
 18 of what it is like for a smoker to experience these
 19 consequences.

20 Q. So they have to know what it's like to 02:36 PM
 21 have lung cancer?

22 A. Yes.

23 Q. Or they have to know --

24 A. What it feels like. What its physical and
 25 psychological feelings associated with it. 02:36 PM
 162

1 Q. And without knowing the likelihood and the 02:36 PM
 2 nature of the consequences is it possible for a
 3 person to make a rational decision about whether or
 4 not to smoke?

5 A. Well, what do you mean by "rational"? 02:36 PM

6 Q. What do you usually assume rational to
 7 mean?

8 A. Rational is a very complicated concept.
 9 Philosophers and decision theorists have been
 10 arguing for centuries over what philosophers -- what 02:37 PM
 11 rational means.

12 Q. In Chapter 6 of your book --

13 A. I use it in a specific way. And I use it
 14 rational means by making an irrational -- if you
 15 make a decision that turns out to be in your best 02:37 PM
 16 interests.

17 Q. So for a decision to be rational it has to
 18 turn out to be in your best interests?

19 A. Well, I mean, sometimes things can go
 20 wrong by bad luck, so I mean you have to discount 02:37 PM
 21 the chance -- that doesn't mean the decision wasn't
 22 rational just because it turned out poorly.

23 On the other hand, when decisions
 24 consistently turn out poorly, you know, for are a
 25 population and you go in and follow the -- follow 02:37 PM
 163

1 that crowd, like Lemmings going over that cliff, I 02:38 PM
 2 think one can question the rationality of that
 3 decision.

4 Q. Using your definition of rational, can a
 5 person make a rational decision about whether or not 02:38 PM
 6 to smoke without fully understanding the nature of
 7 the consequences of smoking and the likelihood of
 8 those consequences?

9 A. I wouldn't want to get hung up on the word
10 "rational" here. I mean, it's used a lot. I mean, 02:38 PM
11 I use it because Viscusi talks about it and he
12 throws the term out and he says that people are
13 making rational decisions.

14 The point of this chapter, one of the
15 points and also the paper on "The Affect Heuristic" 02:38 PM
16 is that rationality is more complicated than that.
17 There is kind of a short-term rationality and a
18 long-term rationality that we're not always the same
19 person. And, you know, the kid whose acting
20 socially appropriately at a party taking a cigarette 02:39 PM
21 from a friend, I mean, that's not an irrational act.
22 It's just that with tobacco it can lead to
23 consequences that they later greatly regret and wish
24 they hadn't gone that course.

25 So, I mean, you know, I don't think 02:39 PM
164

1 rationality is really the best way to characterize 02:39 PM
2 it. I think the behavior is whether -- the quality
3 is whether this is in the person's best interest to
4 do this.

5 Q. In your research have you uncovered any 02:39 PM
6 activities that people engage in and fully
7 appreciate the nature of the consequences and the
8 likelihood of the consequences of the behavior?

9 A. Again, this relates to the first question
10 you asked me about. Fully? I mean, fully is such 02:40 PM
11 an extreme term that, you know, we probably are
12 never fully aware of anything.

13 Q. Let me ask a different question, then.
14 Using your definition of appreciating the risks, you
15 say that appreciating the risks of something means 02:40 PM
16 appreciating the nature of the consequences as well
17 as the likelihood of those consequences?

18 A. Right.

19 Q. Do you know of any activity -- have you
20 uncovered any activity in your research over the 02:40 PM
21 years that people engage in and appreciate the risks
22 of that activity using this definition?

23 A. Basically, I think that people are
24 primarily rational. They do things that more likely
25 than not support their goals and motivations. So I 02:41 PM
165

1 mean, the fact that humans survive and, you know, 02:41 PM
2 manage as well as they do in the world means that
3 there is a lot of things that they are doing that
4 are working for them.

5 Q. Can you identify any activity that people 02:41 PM
6 engage in and in which they -- strike that. Can you
7 identify any activity that people engage in and
8 appreciate the risks of that activity using your
9 definition of appreciating the risks in Paragraph 6?

10 A. You mean adequately appreciate the risks? 02:41 PM

11 Q. I didn't want to use adequate.

12 A. I would say deciding to go to college.
13 You don't -- you know --

14 Q. When people decide to go to college do
15 they appreciate the nature of the consequences of 02:42 PM
16 going to college?

17 A. I don't think you can predict all of the
18 different things that are going to occur in your
19 life because you went to college, but you are making

20 a bet that your life will be better for having gone 02:42 PM
 21 to college, and in that sense I think that they
 22 have, you know, they have some valid knowledge and
 23 appreciation.

24 Q. Can you think of any other activities?
 25 A. Yeah, get in the car and you drive to the 02:42 PM
 166
 1 store. 02:42 PM

2 Q. Now, when people get in a car to drive to
 3 the store, do they appreciate the consequences of
 4 getting in the car and driving to the store and the
 5 likelihood that those consequences will occur? 02:42 PM

6 A. I think they have a sense of that from
 7 their experience, you know, it's something that they
 8 -- I mean, they have a -- well, it is -- I don't
 9 think they fully appreciate all of the things that
 10 can happen. I mean, I think people have a sense of 02:43 PM
 11 over confidence when they drive. But I guess I
 12 would have to think -- I would have to think more
 13 about it, what situations they do or do not have
 14 adequate appreciation of the risk from. I think --
 15 I would have to think about that. 02:43 PM

16 Q. In the research that you've done on
 17 smokers understanding the risks of smoking you found
 18 that smokers acknowledge that smokers in general
 19 face increased health risks compared to nonsmokers;
 20 right? 02:44 PM

21 A. Yes.

22 Q. And you know that the general public has
 23 heard for decades or read in reports that cigarette
 24 smoking can cause lung cancer; right?

25 A. Well, that information has been around. 02:44 PM
 167

1 Q. And people have heard it? 02:44 PM

2 A. A lot of people have heard it, yes.

3 Q. And in 1954 you are aware that the Gallop
 4 organization conducted a poll in which 90 percent of
 5 respondents said that they had heard or read about 02:44 PM
 6 reports that cigarettes may be one of the causes of
 7 lung cancer; correct?

8 A. Uh-huh. Yes.

9 Q. And, in fact, your book contains the
 10 results of that poll; correct? 02:44 PM

11 A. Does it? If you say it does?

12 Q. Okay. And in 1990 94 percent of Americans
 13 agreed that smoking is a cause of lung cancer;
 14 correct?

15 A. Could be. 02:45 PM

16 Q. And in the research you've done you found
 17 that the majority of smokers believe that smoking
 18 shortens their life? I'm sorry. Let me rephrase
 19 that. You found that the majority of smokers
 20 believed that smoking can shorten one's life? 02:45 PM

21 A. I think so, yes.

22 Q. And your work and studies by other people
 23 show that smokers acknowledge that smokers face
 24 higher risk of various health problems as compared
 25 to nonsmokers; correct? 02:45 PM
 168

1 A. I think there is data on that, yes. 02:45 PM

2 Q. Now, one way you could learn about how
 3 much smokers appreciate the risks of smoking is to
 4 ask them a survey question how risky is smoking to

5 your health; correct? 02:45 PM
6 A. Yes.
7 Q. And that was a question that was asked in
8 the Annenberg survey, in the second one, perhaps;
9 right?
10 A. Yes. 02:46 PM
11 Q. And if you need to look it's Question 3A.
12 Does that sound right?
13 A. Yes.
14 Q. And another way if you wanted to learn
15 about people's understanding of the risks of smoking 02:46 PM
16 is to ask them a survey question how risky is
17 smoking every day to your health; right?
18 A. Yes. Um-hum.
19 Q. And that is a question that was also asked
20 in the second Annenberg survey; right? 02:46 PM
21 A. Yes.
22 Q. And it's Question 4A?
23 A. Yes.
24 Q. Now, another way to learn what people
25 think about the risks of smoking is to ask them how 02:46 PM
169
1 much they think smoking a pack a day would shorten 02:47 PM
2 their life; right?
3 A. Yes.
4 Q. And the second Annenberg survey asks that
5 question as well? 02:47 PM
6 A. Yes.
7 Q. And that is Question 7?
8 A. Yes, in two versions.
9 Q. Now, you expressed the opinion in your
10 federal report that beginning smokers give little 02:47 PM
11 conscious thought to risk; correct?
12 A. Yes.
13 Q. And on what basis do you make that
14 statement?
15 A. Partly from the survey results which they 02:47 PM
16 say they don't think about it.
17 Q. Is that -- can you point me to which
18 question and which survey you are talking about?
19 A. Page 111.
20 Q. Okay. I'm sorry. Okay. This is from 02:47 PM
21 Annenberg II?
22 A. Yes.
23 Q. And which of these questions do you rely
24 upon for that opinion?
25 A. Question 19A. 02:48 PM
170
1 Q. Okay. Any others? 02:48 PM
2 A. The material in the tobacco documents
3 which basically echoes the same theme based on their
4 focus groups and other studies.
5 Q. Any other basis for that statement? 02:48 PM
6 A. No.
7 Q. In your expert report in the federal case
8 you also say that -- this is in Paragraph 4, if you
9 want to look --
10 "Most smokers begin to think of risk only 02:49 PM
11 after they have started to smoke
12 regularly, become addicted and
13 gain what to them is new
14 information and appreciation of
15 smoking's health risks." 02:49 PM

16 That's one of your opinions; right?
17 A. Right.
18 Q. What is your basis for that statement?
19 A. Well, part of it comes from the same
20 table. Question 19C, how much do you think about 02:49 PM
21 the health affects of smoking now? You see the
22 change from 5 percent to 53 percent. Since you
23 started smoking have you heard about health risks
24 that you didn't know about when you started? High
25 percentage say "yes" to that. 02:50 PM
171
1 Q. And that is Question 19D? 02:50 PM
2 A. 19D. Oh, also Question 19E is related to
3 one of the questions you've been asking.
4 Q. That is it is related to beginning smokers
5 give little conscious thought to -- 02:50 PM
6 A. Yeah, thinking about health or find
7 something new and exciting.
8 Q. Let me ask you a question about 19E.
9 Suppose somebody was not thinking about how it would
10 affect their future health or about how they were 02:50 PM
11 trying something new and exciting, they weren't
12 thinking about either one of those, what is there --
13 what answer should they give?
14 A. What do you mean what answer should they
15 give? 02:50 PM
16 Q. They are presented with two options and
17 those options don't cover the landscape of
18 alternative answers; right?
19 A. There is some category called "other" and
20 also a category called "don't know." 02:51 PM
21 Q. Yeah, but respondents were not presented
22 with "other" as an option or "don't know" as an
23 option?
24 A. I don't know. I would have to look at the
25 questionnaire. Well, obviously, they are not giving 02:51 PM
172
1 that as a category. If they volunteer, yeah, and 02:51 PM
2 don't know is something -- both of those would be
3 volunteered answers. Right.
4 Q. Is this what is known as a forced-choice
5 question? 02:51 PM
6 A. It is a choice that they are given between
7 these two. They are read these two responses, yes.
8 Q. Would you agree that this is not a good
9 survey practice to give people two options and only
10 two options that don't cover the landscape of 02:52 PM
11 possible answers?
12 A. No, I don't agree with that. I mean, they
13 could give you -- even if you are telling -- you are
14 giving them these two response options, they could
15 choose either one, they could have said they were 02:52 PM
16 thinking about their future health. One might have
17 even predicted that a socially desirable response
18 would be that they were, you know, that they were
19 thinking about it.
20 Q. Well, a socially desirable response could 02:52 PM
21 also be that they were thinking that they weren't
22 thinking about their future health; correct?
23 A. Could go either way, yeah.
24 Q. You were answering my question as to your
25 basis for your statement that most smokers beginning 02:53 PM
173

1 to think of the risks only after they start to smoke 02:53 PM
2 regularly, become addicted and gain to them what
3 becomes new information?
4 A. Yes.
5 Q. And you mention 19C, 19A and 19D. Are 02:53 PM
6 there any other -- is there any other basis for that
7 statement?
8 A. I think 19 -- 19F is really related to
9 that.
10 Q. Okay. Anything else? 02:53 PM
11 A. Well, I think to the extent that most
12 people don't expect to be smoking for a very long
13 period of time -- no, that would be one related to
14 addiction. No, those are basically the main
15 contributors to that opinion. 02:54 PM
16 Q. Is it your opinion based on the
17 information that you've reviewed that the majority
18 of smokers did not think about how smoking might
19 affect their health before they started smoking?
20 A. What do you mean before they started 02:54 PM
21 smoking? The moment before? The month before?
22 Q. At any time before? Let's start with at
23 any time before.
24 A. Okay. Please repeat the question.
25 Q. Is it your opinion that the majority of 02:55 PM
174
1 smokers did not think about how smoking might affect 02:55 PM
2 their health at any time before they started
3 smoking?
4 A. That the majority did not think about how
5 smoking -- I think that their awareness, you know, 02:55 PM
6 at some small level is there that, you know, that
7 smoking can be harmful. I think the question is
8 really, you know, how much of a role does that play
9 in the decision process. And I think what we find
10 is that -- I mean, basically most kids are not -- 02:55 PM
11 the majority of kids are not starting to smoke. So
12 if there is 30 percent of, you know, adolescents are
13 smoking, then 70 percent are deciding not to smoke.
14 And probably one of the major factors there is that
15 they appreciate in some sense or have focused on 02:56 PM
16 some of the negative sides of it and haven't been
17 overwhelmed by the positive affect.
18 So the ones that do smoke, there is some
19 balance, some tug going on between positive and
20 negative and they go, you know, they go over on the 02:56 PM
21 positive side and initiate the behavior.
22 Q. Is it your opinion that smokers gain new
23 information and greater appreciation of smoking
24 risks as time goes by?
25 A. That's what they say. 02:56 PM
175
1 Q. Then if that were true, would you expect 02:56 PM
2 people's rating of the risks of smoking to increase
3 as they get older?
4 A. If you ask them to rate the risks of
5 smoking, I mean, the rating is pretty high among 02:57 PM
6 young people. Maybe that is why 70 percent of them
7 don't smoke. I think what you would expect from
8 this appreciation of the risk is that people would
9 want to quit and try to quit. I think that is more
10 important as a consequence of this realization and, 02:57 PM
11 you know, appreciation of the risk.

12 Q. You also say in your federal report that
13 smokers come to wish that they had never begun to
14 smoke; is that right?
15 A. Vast majority do, yes. 02:58 PM
16 Q. And what is your basis for that statement?
17 A. Well, the basis is the response to the
18 question that is in Chapter 6, you know, if you had
19 it to do -- I forget now -- if you could go back in
20 time -- 02:58 PM
21 Q. If you could just let me know what the
22 question number is.
23 A. Well, we can look at the table, Table 612.
24 Well, it doesn't give you the question, but I can
25 find the question. Question 19G. If you had it to 02:58 PM
176
1 do over again, would you start smoking? 02:58 PM
2 Q. Which survey is that in?
3 A. In Annenberg II.
4 Q. Okay. Anything else?
5 A. Well, that is the same question used by 02:58 PM
6 Bates in the UK with a slightly different wording,
7 kind of a British flare on the way he asks the
8 question.
9 Q. He spelled things differently, too?
10 A. Yeah. It's the question we used with a 02:59 PM
11 small sample of young people in Oregon. And then I
12 thought that I originated this question, but then I
13 saw that Gallop used it in the '90s and I think even
14 in the '80s used basically the same question, you
15 know, in some surveys. So the question has been 02:59 PM
16 around and at various times and places and surveys
17 and continents.
18 Q. And do you rely on anything else for this
19 opinion?
20 A. Well, if you ask people when they say -- 02:59 PM
21 when they answer that question no, if you ask them
22 why, why not, then they'll give you information and
23 this is what is in the Bates article that I gave you
24 what is called "The Picture of Misery." And that's
25 kind of the -- in fact, that this is correlated 03:00 PM
177
1 systematically with the number of times people have 03:00 PM
2 tried to quit and their feeling that they are
3 addicted to smoking, you know, is all related to
4 that. I think it all paints a picture.
5 Q. Okay. Anything else? 03:00 PM
6 A. As to why they are unhappy about smoking?
7 Q. No, I want to know your basis, everything
8 you are relying upon?
9 A. What I'm relying upon why they are unhappy
10 about it? 03:00 PM
11 Q. Yes.
12 A. Well, I think that is much of my basis.
13 Q. Okay. Paragraph 5 of your federal report.
14 A. Yeah.
15 Q. You state that: 03:01 PM
16 "My research finds that young smokers as
17 cumulative risk takers believe
18 they can get away with some amount
19 of smoking before the risk takes
20 hold." 03:01 PM
21 First of all, what is a cumulative risk
22 taker?

23 A. I'm sorry, it's on the next page. A
 24 person who takes a risks or behaves in a way where
 25 the risk cumulates incremently with repeated actions 03:01 PM
 178
 1 or exposures. 03:01 PM
 2 Q. And then is the definition for cumulative
 3 risk one that accumulates with repeated exposures?
 4 A. Yes, the risk accumulates with repeated
 5 exposures, yes. 03:02 PM
 6 Q. Cumulative risk is a risk that cumulates
 7 in one as one engages in the activity more and more?
 8 A. Yes, or just as one engages in the
 9 activity over time, you know. Repeatedly, I guess
 10 that is more and more. 03:02 PM
 11 Q. Is there a word for a type of risk that is
 12 not cumulative? Why don't we just call it a
 13 noncumulative risk.
 14 A. Well, this is really linked to things that
 15 are repetitive, activities that are repetitive in 03:02 PM
 16 nature. I mean, risk does cumulate over time. I
 17 was just thinking of the risk of an asteroid attack
 18 on earth. There is nothing that we repeat here,
 19 except that we repeat over time and the probability
 20 over a longer period of time is higher than the 03:03 PM
 21 probability over a shorter period of time.
 22 So in that sense the risk grows with time,
 23 but it's not due to any kind of repetitive action
 24 other than just existing in the solar system.
 25 So I think this is really meant to 03:03 PM
 179
 1 highlight activities like driving and cigarette 03:03 PM
 2 smoking where you have thousands and thousands of
 3 repeated acts each carrying an incremental volume of
 4 risk.
 5 Q. And is the cumulative nature of the risk 03:03 PM
 6 of smoking demonstrated by the fact, for example,
 7 smoking every day carries higher risks than smoking
 8 every other day? Is that something that
 9 demonstrates the cumulative nature of the risks of
 10 smoking? 03:04 PM
 11 A. In a way it does, but not in an
 12 interesting way. I mean, yeah, okay. More exposure
 13 is worse than less exposure. I mean, that's part of
 14 an assessment, but I think not really the important
 15 aspect of this type of risk. 03:04 PM
 16 Q. What is the important aspect of this type
 17 of risk?
 18 A. The important aspect is that the activity
 19 is performed, you know, one unit at a time many,
 20 many times, thousands and thousands of times. And 03:04 PM
 21 the, quote, actual risk of each of those actions is
 22 very, very small.
 23 Q. In order --
 24 A. You know, but does accumulate to some
 25 significant risk over many replications of the 03:05 PM
 180
 1 action. 03:05 PM
 2 Q. In order to understand whether something
 3 is a cumulative risk as opposed to some other type
 4 of noncumulative risk, what would a person need to
 5 know? 03:05 PM
 6 A. Whether it increases incrementally with
 7 exposure.

8 Q. In other words, they would need to know
9 with respect to smoking that smoking every day
10 carries higher risks than smoking every other day? 03:05 PM
11 A. Well, that's one. I mean, as I say that
12 is the less interesting aspect of appreciating.
13 Q. But that would be --
14 A. And it may be that -- yeah, I mean --
15 that's -- in some sense, yes, I would agree with 03:06 PM
16 that, but --
17 Q. And do young smokers recognize that
18 smoking is a cumulative risk?
19 A. I don't think they think of it in that
20 way. 03:06 PM
21 Q. What do you --
22 A. I think in a sense I think they recognize
23 that the -- that the risk of the first cigarette or
24 the next cigarette that they are not going to drop
25 over dead with the first cigarette or the 11th 03:06 PM
181
1 cigarette. And quite likely they will not drop dead 03:06 PM
2 with that cigarette. I think there is that sense so
3 they understand that aspect of it.
4 Q. Okay. I want to deal with the other part
5 of the sentence I read earlier from Paragraph 5 03:06 PM
6 where you say that young smokers believe that they
7 can get a way with some amount of smoking before the
8 risk takes hold. And what is your basis for
9 rendering that opinion?
10 A. There are a number of bases. There is a 03:07 PM
11 sense in which smokers more than nonsmokers believe
12 that the next cigarette isn't going to cause any
13 significant harm. They often also say that in the
14 tobacco documents in their focus groups they talk
15 about young people think that, you know, a few 03:08 PM
16 cigarettes isn't going to harm them. Also, when you
17 ask them why not, they sort of, you know, they
18 indicate that they were just in it for the
19 short-term and thought they would get out before any
20 harm took hold. Or they felt that they were wrong. 03:08 PM
21 Q. Any other basis for that statement?
22 A. Well, I think that in a physical sense it
23 is -- there is some truth to that. If you are
24 looking only at the immediate physical damage even
25 though I think there is damage, it's very, very 03:08 PM
182
1 slight. It does cumulate in a significant way, but 03:09 PM
2 one cigarette I think is, you know, a small amount
3 of damage.
4 And I think also that we all can recognize
5 that in our own behavior -- I mean the point is 03:09 PM
6 really, I think an obvious point, we do this with
7 all of the things that we do that we know are bad
8 for us, you know, like eating a rich dessert, you
9 know. Okay? If you do that every meal, it's not --
10 it's likely to have some serious consequences. But, 03:09 PM
11 you know, this one dessert this time isn't going to
12 do me in. I think we all would guess that most of
13 us have felt the same way. So all of this comes
14 from research, you know, it's our every day common
15 experience. 03:09 PM
16 Q. And the issue of smokers believing that
17 more so than nonsmokers that that next cigarette
18 won't cause any harm, there were questions in the

19 Annenberg survey that got at that issue; right?
20 A. Yes. 03:10 PM
21 Q. In your opinion for how long do young
22 smokers believe that they can smoke before the risks
23 take over?
24 A. It's not clear. I mean, there are
25 questions floating around that ask about that. I 03:10 PM
183
1 can't remember exactly what the answers are, but 03:10 PM
2 there are questions about that, but I don't rely
3 primarily on those questions. You'll find a
4 significant number of people who will say there is
5 really no risk in the first few years or this sort 03:10 PM
6 of thing, and I think they say that. I think all of
7 this -- really, this is a lot of types of data
8 points.
9 Q. You also mentioned in the physical sense
10 it's true that if you look at the immediate future 03:11 PM
11 smoking an individual cigarette isn't going to cause
12 much immediate harm or something to that effect;
13 right?
14 A. Yes.
15 Q. Is it your opinion that smokers believe 03:11 PM
16 that any health cigarettes -- is it your opinion
17 that the smokers believe that any health affects of
18 smoking will not appear early on in their smoking?
19 A. Is it their opinion?
20 Q. Do smokers believe that health affects of 03:11 PM
21 cigarette smoking will not appear early on in their
22 smoking?
23 A. Well, do they believe that or if you ask
24 them or do they think that when they smoke? I mean,
25 clearly they see a lot of people, their friends and 03:12 PM
184
1 other people smoking. They probably -- usually you 03:12 PM
2 don't see visible signs of damage. And that's one
3 of the problems with it is that the signs, the
4 changes that are taking place are not visible to a
5 certain time. So clearly they see their friends 03:12 PM
6 smoking and appear healthy, they see all of the
7 models in the cigarette ads smoking and not showing
8 any visible signs, so I don't see evidence that they
9 are kind of dwelling on expecting to see bad things
10 happening soon. 03:13 PM
11 Q. Do smokers think that the health affects
12 of smoking will not appear early on in their
13 smoking?
14 A. They may not even be thinking about that
15 at all. So if you ask them the question, they may 03:13 PM
16 or may not, it may depend on how you ask them. I
17 have a sense that that question has been asked in
18 some surveys, I don't remember what the answers are,
19 but it's my sense that in terms of what we call
20 availability the health harm is not available. The 03:13 PM
21 harmful processes are not visibly available to
22 people and that would tend to put them to a certain
23 extent out of mind.
24 Q. Do you have an estimate as to what
25 proportion of young smokers believe they can get 03:14 PM
185
1 away with some amount of smoking before the risk 03:14 PM
2 takes hold?
3 A. Well, I'm sure we've asked that -- oh,

4 what proportion. I don't have a specific estimate,
5 no. 03:14 PM

6 Q. Is it the majority of smokers?
7 A. Well, my opinion is that they all believe
8 they can get away with some amount before the risk
9 takes hold. You know, some amount being variable
10 from one cigarette to two. I don't think anyone who 03:14 PM
11 takes the first cigarette thinks that they are
12 endangering their life.

13 Q. And if you wanted to know whether or what
14 smokers -- whether smokers believed that there were
15 risks caused by smoking for the first few years of 03:15 PM
16 smoking, you could ask them that question; right?

17 A. You can ask them that question. When we
18 do we find that they tend to say "yes." But I think
19 we're -- you know, I'm not -- you know, their
20 answers are their answers. Whether they are really 03:15 PM
21 thinking that way when they are behaving -- because
22 they don't smoke for the first few years. They
23 smoke one cigarette at a time.

24 Q. In Question 5 in the second Annenberg
25 survey asks that type of question? Annenberg II, 03:16 PM
186

1 Question 5-1. 03:16 PM

2 A. 5. Okay. Imagine the person who starts
3 to smoke a pack of cigarettes a day at age 16.
4 There is usually no risk at all to the person. No
5 risk to the person at all for the first few years. 03:16 PM
6 And then the second question almost looking they
7 eventually harm this person's health. There is
8 really no harm to him or her smoking the very next
9 cigarette.

10 Q. Do you believe that Question 5-1 in 03:17 PM
11 Annenberg II would provide a reasonable basis for
12 determining whether smokers believe that a few
13 year's worth of smoking carries risks?

14 A. I don't know. I don't know. I mean, you
15 get a difference between smokers and nonsmokers. 03:17 PM
16 Smokers are more likely to agree to these statements
17 than nonsmokers. But even smokers tend to agree
18 with these statements when presented this way as
19 questions. So whether that is kind of -- again, you
20 know, whether when they smoke the very next 03:18 PM
21 cigarette they are feeling a sense of harm. I think
22 that is a critical factor here.

23 Q. Now, another way you can learn when
24 smokers believe the risks of smoking take hold is to
25 ask them how long it takes for smoking to seriously 03:18 PM
187

1 harm the health of a new smoker; right? 03:18 PM

2 A. Yes.

3 Q. And the second Annenberg survey asks this
4 question also?

5 A. Yes. 03:18 PM

6 Q. And it's Question 8 in that survey?

7 A. Probably.

8 Q. Is it Question 8?

9 A. Yeah.

10 Q. And would you agree that Question 8 would 03:19 PM
11 provide a reasonable basis for figuring out whether
12 smokers believe -- strike that. Do you believe that
13 Question 8 would provide a reasonable basis for
14 determining when smokers believe the risks of

15 smoking take hold in a new smoker? 03:19 PM
16 A. I don't know. I think Question 8 would be
17 -- would -- I don't think people have a good sense
18 of this when they'll answer this question. I think
19 there is a difference between smokers and nonsmokers
20 in their answers, but, you know, it's kind of an 03:19 PM
21 analytic question about what is really an
22 experiential process.
23 MR. McCARTER: Why don't we take a short
24 break right now.
25 (Recess taken.) 03:35 PM
188

1 BY MR. McCARTER:
2 Q. Back on the record. Paragraph 5 of your
3 federal report it's on Page 3. It's a carry over
4 paragraph. It says:
5 "In short many young smokers tend to 03:35 PM
6 believe that smoking the very next
7 cigarette poses little or no risk
8 to their health or that smoking
9 only for a few years poses little
10 or negligible risk." 03:36 PM
11 What is your basis for saying that many
12 young smokers tend to believe that smoking the very
13 next cigarette poses little or no risk to their
14 health?
15 A. The paper on cumulative risk. Journal of 03:36 PM
16 behavior and decision-making. And also, I think, it
17 may also be repeated in the paper that is in the
18 Duke Law Journal. And I think also it's one of the
19 questions that we looked at here. So you see that,
20 you know, some percentage of smokers believe that. 03:36 PM
21 And that the more they smoke the more they are
22 smoking the more they tend to agree with that
23 statement.
24 Q. Okay. When you say it was one of the 03:36 PM
25 questions asked here, you fingered the book. You're
189
1 talking about --
2 A. We just went through it awhile back.
3 Q. Let me ask the question now. The question
4 you are referring to is it in the second Annenberg
5 survey Question 5-2? 03:37 PM
6 A. Yes. Yes.
7 Q. Is there any other basis for that
8 statement that many young smokers tend to believe
9 that smoking the very next cigarette poses little or
10 no risk to their health? 03:37 PM
11 A. Again, these are statements that smokers
12 made. I've seen this statement in the literature
13 from the tobacco documents where they talk about
14 short-term respect of not seeing much risk in the
15 short-term. 03:37 PM
16 Q. You say here many young smokers, how many
17 is many?
18 A. Well, I would have to look at the -- I
19 can't remember the specific percentages, but
20 supposing that it's -- let's suppose it's a third of 03:37 PM
21 the smokers in our surveys who would agree to that.
22 If they smoke more, it's even a higher percentage.
23 You multiply that by the number of smokers, it's
24 certainly in the many thousands or more, so maybe
25 millions, I don't know. It's a lot. Multiply it 03:38 PM

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1 out and there is a lot of people saying that. 03:38 PM

2 Q. Many refers to?

3 A. Many refers to a bunch. You know, a lot.

4 Many. Many.

5 Q. Many refers to whatever percentage of 03:38 PM

6 people answered the question saying that --

7 A. Well, it's not a true number if you

8 extrapolate from that percentage to a larger

9 population, that percentage of all of the young

10 smokers, it's a lot of kids. 03:38 PM

11 Q. Is it the majority of young smokers?

12 A. Well, I think in some cases it gets up to

13 about 50 percent I think if they are smoking a lot

14 that they would agree to that. But, you know, in

15 the survey it seems to be less than 50 percent. But 03:39 PM

16 that's, you know, the way they respond in the

17 survey. The way they are actually living their

18 lives and, you know, whether they are viewing what

19 they are doing in their lives may be much higher

20 because as I said, this is a very powerful 03:39 PM

21 phenomenon, this incremental risk. And there is a

22 basis of truth in it. I mean, you know, you can

23 smoke a little bit with negligible risk.

24 Q. You also say that many young smokers

25 believe that smoking for only a few years poses 03:39 PM

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1 negligible risk. What is the basis for that 03:39 PM

2 statement?

3 A. I think because the way the questions were

4 worded we said little -- this is an agreement and it

5 was phrased little or no risk. So I may have 03:40 PM

6 translated little or no to negligible.

7 Q. So somebody says that smoking for only a

8 few years poses little risk, you lump that percent

9 into --

10 A. No, I think --

11 Q. You have to let me finish. If a person

12 says that smoking for only a few years poses a

13 little risk you categorize that person as saying

14 negligible risk?

15 A. I think the wording was little or no 03:40 PM

16 combined. But I can't remember exactly.

17 Q. And what are the sources of information

18 upon which you base this opinion? Are they survey

19 questions? Articles or something?

20 A. Yes, there is an article on cumulative 03:40 PM

21 risk in -- it's one of the first papers that was

22 written. Well, there are two papers in the Journal

23 of Behavioral Decision-making in 2000. The first of

24 those two.

25 Q. Are there any Annenberg survey questions 03:41 PM

192

1 that get at this issue? 03:41 PM

2 A. Yes.

3 Q. Does Question 5-1 in the second Annenberg

4 survey ask about this issue?

5 A. Yeah, there is usually no risk to the 03:41 PM

6 person at all for the first few years.

7 Q. And do you base your opinion on that

8 question as well?

9 A. Yeah, partly.

10 Q. Now, you've recently undertaken a survey 03:41 PM

11 on perceptions of the risks of smoking with Dr.
12 Weinstein at Ruckers University?

13 A. Yes. Uh-huh.

14 Q. And do you rely on anything in that survey
15 for your opinions in this case? 03:41 PM

16 A. No. I mean, it's more of the same really
17 of what we've seen in Annenberg. I mean, there is
18 some useful data, but we have we haven't really
19 written this up for publication and it's consistent
20 with a lot of what we've been talking about and I 03:42 PM
21 haven't produced it. So I'm not going to rely on
22 it. You know, I don't think it adds that much more
23 to what I probably used.

24 Q. That survey you conducted with Weinstein
25 asked youth smokers a question about whether they 03:42 PM
193

1 recognized the long-term use of smoking? 03:42 PM

2 A. I think so, yes.

3 Q. Have you looked at the answers to those
4 questions at all?

5 A. Yes. 03:42 PM

6 Q. What did you find?

7 A. I would have to look at the specific
8 answers to that. I don't know.

9 Q. Did you consider the questions asked in
10 that survey to be reliable questions? 03:43 PM

11 A. Yeah, they are related to the kinds of
12 questions that we asked in Annenberg II, yeah.

13 Q. Okay. Paragraph 6 of your federal report
14 Exhibit 4 you state -- and I know you've been asked
15 about this in other depositions -- you say: 03:43 PM

16 "I have seen no evidence to show that
17 teenagers or others who start
18 smoking have realistic knowledge
19 of what it is like for a smoker to
20 experience lung cancer, COPD, 03:43 PM
21 congestive heart failure or any of
22 the other fates awaiting smokers
23 that many would consider worse
24 than death."
25 Do you see that? 03:43 PM
194

1 A. Yes. 03:43 PM

2 Q. And when you say you have seen no evidence
3 you are not meaning to imply that you have seen
4 evidence that actually contradicts the notion that
5 smokers have realistic knowledge; correct? 03:44 PM

6 A. Yes and no. I think there is some
7 questions in the Weinstein study that asks people if
8 they know what it's like to experience these things,
9 and I think a very high percentage of people say
10 that they don't. But as I haven't -- you know, we 03:44 PM
11 haven't -- that work is still ongoing and I haven't
12 put that in a form to report or anything.

13 Q. And you are not relying on the
14 Weinstein --

15 A. I'm not relying on that. 03:44 PM

16 Q. Is there any other evidence that you've
17 seen that demonstrate that people who do start
18 smoking do not have any realistic knowledge of what
19 it's like to have any of these diseases?

20 A. Well, to a certain extent they don't even 03:44 PM
21 have knowledge of these diseases. Once you get

22 beyond lung cancer, lung cancer is almost
 23 universally acknowledged now as a consequence of
 24 smoking. Once you get away from lung cancer the
 25 percentage of people who -- it's not -- if you ask 03:45 PM
 195

1 them does smoking causes X, Y, Z, they may say 03:45 PM
 2 "yes." If you ask them what does smoking cause,
 3 what are the health consequences? You get lung
 4 cancer and then it quickly fails off. So it's not
 5 only that they -- I believe that they don't 03:45 PM
 6 understand what it feels like. I mean, I don't
 7 understand what it feels like to have these things
 8 either, so I don't think it's a very profound
 9 statement. But they don't even seem to be aware
 10 without prompting that these are consequences of 03:45 PM
 11 smoking.

12 Q. Is there any evidence that could possibly
 13 show that people who do start smoking have a
 14 realistic knowledge of what it's like to have any of
 15 these diseases? 03:45 PM

16 A. Well, if I ask them -- first, a lot of
 17 these studies have focused on that and in trying to
 18 get at that. I mean, but I could see, oh,
 19 questioning young people and, you know, it might be
 20 that they've worked with patients or have relatives 03:46 PM
 21 who have experienced these things, you know, a
 22 parent or grandparent whom they are close to and
 23 they have watched this close at hand and they would
 24 tell you, yeah, you know, I watched my grandmother
 25 die of this, that or the other thing, you know, and 03:46 PM
 196

1 I took care of her and this sort of thing. 03:46 PM

2 Q. Would watching and taking care of a parent
 3 who was dying from a smoking-related disease give
 4 somebody a sense of what it's like to suffer these
 5 diseases? 03:47 PM

6 A. Well, I think that would be give him more
 7 of a sense than they would otherwise have.

8 Q. Would you agree that it's impossible for
 9 somebody to appreciate the nature of the
 10 consequences of smoking without actually 03:47 PM
 11 experiencing those consequences themselves?

12 A. That is a good question. Almost a
 13 philosophical question. I mean, it gets to the
 14 question of what does it mean to really understand
 15 risk, you know, in a full sense. And I think it's 03:47 PM
 16 very difficult to understand these -- these
 17 experiences until you are there.

18 I think the same thing is going on with
 19 addiction. And that is the point that Loewenstein
 20 makes in his book about the nature of addiction 03:47 PM
 21 because it's hard to understand addiction until you
 22 are there. Once you are out of it, you don't
 23 remember and so forth. So all of these things are
 24 hard to understand well unless there is some
 25 determined effort to make you understand those 03:48 PM
 197

1 things. 03:48 PM

2 Q. Can you think of anything anybody could do
 3 to make people understand what it's like to have a
 4 smoking-related disease?

5 A. You could certainly try by giving people 03:48 PM
 6 the experience of getting to know some of these

7 people and hearing from them what the experience is
8 like for them.

9 Q. And how would you go about doing that?

10 A. You could take people around to hospitals. 03:48 PM

11 Q. You would pick people up at their houses
12 and drive them to hospitals?

13 A. I mean, if you are asking how could you
14 educate about the consequences and that's one way to
15 do it. 03:49 PM

16 Q. Okay. Are there any other ways?

17 A. You can do it through films and, you know,
18 or possibly speakers. I don't think that would be
19 as effective.

20 Q. Any other ways? 03:49 PM

21 A. Well, those are the main ones I can think
22 of.

23 Q. In Paragraph 29 of your federal report you
24 draw some conclusions here at the end. I just
25 wanted to ask you about a phrase you use here. On 03:49 PM
198

1 Page 15 you talk about the actions of the United 03:50 PM
2 States cigarette industry and you talk about the
3 affects of those actions. The actions that you are
4 talking about there, you are talking about cigarette
5 advertising that uses positive imagery; is that 03:50 PM
6 right?

7 A. Would be one suggestion yes.

8 Q. You haven't studied any other actions by
9 the tobacco industry; correct?

10 A. No, the beginning of Paragraph 29 says 03:50 PM
11 based on the assumption that the finder of fact
12 concludes that the tobacco industry did this and
13 that and so forth. There are four things that were
14 assumed. If that was the case, all the evidence led
15 to that conclusion, then based on what we know from 03:51 PM
16 the judgemental side and the psychological side then
17 I would say that those actions that are assumed
18 would have contributed to this.

19 Q. And you have four sets of actions that are
20 assumed? 03:51 PM

21 A. Yes.

22 Q. Okay. And of those four assumed actions
23 you've only investigated the affects of one of those
24 four actions which is cigarette advertisements
25 containing imagery; right? 03:51 PM
199

1 A. No. No. 03:51 PM

2 Q. Okay. Where did I go wrong?

3 A. Well, the first is fostered a message of
4 doubt and controversy regarding health effects. A
5 lot of my work has to do with human judgment 03:52 PM
6 decision-making. And one of the things that comes
7 up in that work is what happens when people get, you
8 know, inconsistent information or conflicting
9 information and so forth. How do they resolve that
10 inconsistency. So there is research from this field 03:52 PM
11 that I work in that bears upon that that shows that
12 when you put forth these conflicting messages that
13 people will hear what they want to hear in that
14 message.

15 Q. Now, you are talking about mixed messages 03:53 PM
16 which is one of the things that you talk about in
17 your report?

18 A. Yes. Or when -- not only mixed messages,
19 but messages that lack a hundred percent certainty.
20 So there is something called the certainty affect 03:53 PM
21 that, you know, things that happen with certainty
22 carry special weight. As soon as you move away from
23 certainty, you lose a lot of the impact of the
24 message. And certainly this is what has happened in
25 these conflicting messages. So you are taking 03:53 PM
200

1 things away from something that is known definitely. 03:53 PM
2 Q. Would you agree that your own prior
3 research suggests that discussions of uncertainty in
4 health risk assessment tends to increase perceived
5 risk? 03:53 PM
6 A. Yes.
7 Q. And the mixed messages that you are
8 talking about are messages talking about the risks
9 of --

10 A. Wait. I'm sorry. The question was that 03:54 PM
11 uncertainty increases perceived risk?
12 Q. Right.
13 A. No, I have to qualify that. It depends on
14 where you are coming from to begin with. It depends
15 on what you want to hear, what your prior views are. 03:54 PM
16 In some areas like nuclear power, if we are talking
17 about the risk of nuclear power and I think nuclear
18 power is moot. If you say that you know there is
19 controversy over the safety evaluations, I tend to
20 think the worst. If you are telling me about the 03:55 PM
21 affects of some food that I love, you know, that
22 might be bad for me but there is a disputed report,
23 then I'm kind of hoping that the new -- that it's
24 not correct, that it's risky. And so there is a
25 whole line of research that is called motivated 03:55 PM
201

1 reasoning that gets into this. 03:55 PM
2 Q. Would you agree that lay people tend to be
3 much more concerned about findings that indicate the
4 possibility of harm than they do about other
5 findings? 03:55 PM
6 A. As a very, very general statement in the
7 areas of perceived risks that we've looked at most
8 which is nuclear power and industrial chemicals and
9 biotechnology, things that are kind of unfamiliar
10 and where -- in those domains people are concerned 03:56 PM
11 about harm. But I don't think that that holds for
12 tobacco. I mean, there is concern I'm certain that
13 is why 70 percent have decided not to smoke, but in
14 terms of how a message is interpreted, you know, by
15 someone who is smoking and who is hoping that it's 03:56 PM
16 not true. The fact that you have another side that
17 says it's not true, I think will have an impact.
18 Q. What about for people who are using cell
19 phones?
20 A. I think there we see great benefit -- 03:56 PM
21 first, they are familiar. They are very beneficial
22 to us. We want them. I would say that unless the
23 evidence is kind of really overwhelming that it's
24 not going to have much impact on the use of cell
25 phones. 03:57 PM
202

1 Q. I want to talk about Paragraph 29 a little 03:57 PM
2 more where you talk about that the actions of the

3 United States cigarette industry contributed to a
4 variety of other things. And I want to focus on
5 your assumption about image-based advertising 03:57 PM
6 resulting in all of these different things. When
7 you talk about image-based advertising resulting in
8 under appreciation of the risks of smoking and
9 smoking initiation, are you comparing some type of
10 world width image-based advertising to some 03:58 PM
11 counter-factual world in which that advertising
12 doesn't exist and figuring out what the difference
13 in risk perception in smoking is between those two
14 worlds?

15 A. In a sense, yes. Although I haven't done 03:58 PM
16 that as an experiment, yeah.

17 Q. What is the counter-factual world that you
18 are imagining? Is there any cigarette advertising
19 in that counter-factual world?

20 A. It wouldn't look like the advertising that 03:58 PM
21 we've seen. It might -- it would be a statement
22 that Philip Morris produces these brands. You have
23 to be careful about their repeated exposure to the
24 names of the brands. I think it probably might have
25 something about -- could have tar and nicotine 03:59 PM
203

1 content, but we know that that is misleading. 03:59 PM
2 I'm not sure. I would have to think more.
3 You know, advertising as we know it, as it's evolved
4 to this -- I mean there are some types of
5 advertising with other products that convey 03:59 PM
6 information. You know, like if you see an ad for a
7 store that sells something you know in your
8 community, the ads saying if you want this item you
9 can find it at this place.

10 And that is advertising that has 04:00 PM
11 informational content. But in terms of advertising
12 that would, you know, would tell you about putting a
13 very dangerous substance into your system, it's hard
14 to think about how you would do that without -- you
15 know, effectively without combining between imagery 04:00 PM
16 and affect.

17 Q. Are you suggesting that in this
18 counter-factual world Philip Morris and other
19 tobacco companies would be using tombstone ads?

20 A. No, maybe they shouldn't be using 04:00 PM
21 advertising.

22 Q. So there would be no advertising in this
23 counter-factual world?

24 A. Possibly.

25 Q. So when you say that the actions of the 04:00 PM
204

1 cigarette industry substantially contributed to 04:00 PM
2 under appreciation of the risks of smoking you are
3 saying that Philip Morris's advertising in general
4 led to that under appreciation?

5 A. Well, they would have been advertising 04:01 PM
6 that Philip Morris products are available in such
7 and such stores. I mean, that would be an
8 informational ad. I mean, to the extent -- I'm
9 saying to the extent that if it is found by people
10 who testify about advertising, marketing and to 04:01 PM
11 associate all of these positive imagery with
12 products, then it contributes to these things.

13 Q. Let's move onto the risks of addiction

14 which you address, I believe, among other places in
15 Paragraph 7 of your federal report. In the first 04:02 PM
16 sentence in there in Paragraph 7 is that young
17 smokers tend to underestimate the risk of becoming
18 addicted to cigarette smoke. What is the risk of
19 becoming addicted to cigarette smoke?

20 A. The risk is that you will smoke for a long 04:02 PM
21 enough time to adversely affect your health.

22 Q. And what is the probability of that risk
23 occurring for somebody who starts smoking?

24 A. It depends how often they smoke probably
25 is related somewhat to -- well -- I don't have a 04:03 PM
205

1 precise probability on that. Clearly significant 04:03 PM
2 number of people who initiate smoking on to greater
3 and greater use and difficulty in stopping. And
4 also you see in the data not only my chapter, but in
5 Benowitz's chapter here about the expectations and 04:03 PM
6 of how long they are going to be smoking and how
7 those expectations are continually violated, people
8 smoking much longer than they anticipated. There is
9 a pretty high percentage who do that.

10 Q. And the second Annenberg survey contains 04:04 PM
11 questions that relate to young smokers perceptions
12 of the risks to becoming addicted to smoking; right?

13 A. Well, there are some questions. Do you
14 consider yourself addicted.

15 Q. Which questions are those? Let me ask 04:04 PM
16 this, first. The question if you consider yourself
17 addicted would not relate to whether or not young
18 smokers underestimate the risk of becoming addicted
19 to smoking, would it?

20 A. No, that asks whether they think they are 04:05 PM
21 addicted.

22 Q. Let me try to be more precise with my
23 question then. Does Question 14 in the second
24 Annenberg survey measure the extent to which young
25 smokers estimate the risks of becoming addicted to 04:05 PM
206

1 cigarette smoking? 04:05 PM

2 A. No.

3 Q. Does Question 14 provide any information
4 about what adult teen smokers believe about the
5 risks of addiction? 04:06 PM

6 A. It probably provides some. I believe this
7 question was given to smokers and nonsmokers. It
8 asks for their opinion. I think the more important
9 questions are those in -- like in Table 6.6,
10 Questions 29, 29-A 29-B. 04:06 PM

11 Q. What page is that on?

12 A. On Page 114.

13 Q. And do you rely on the questions in that
14 table for your opinions that young smokers under
15 appreciate the risks of becoming addicted to 04:07 PM
16 smoking?

17 A. Yes.

18 Q. Are there any other questions in the
19 Annenberg surveys that you rely on for that opinion?

20 A. Not that I can think of. Also, link these 04:07 PM
21 questions with the material by Benowitz in Chapter 8
22 where he presents results from the monitoring of
23 future studies which asks people about the
24 likelihood they will be smoking five years from high

25 school seniors and those people were followed up in 04:07 PM
207

1 a longitudinal study and basically the results there 04:07 PM
2 are very consistent with the results in Chapter 6
3 that were pointing to the tremendous optimism that
4 smokers have, young smokers have about how soon they
5 will have stopped smoking cigarettes. 04:08 PM

6 Q. Okay. Is there any other basis for your
7 opinion that young smokers tend to under appreciate
8 the risks of becoming addicted to smoking?

9 A. Well, that's what they also say when you
10 ask them why they wouldn't do it again. They say I 04:08 PM
11 didn't realize how hard it would be to quit.

12 Q. Is that the Bates article?

13 A. That would be in Bates, yeah.

14 Q. Any other basis for that opinion?

15 A. I believe the Weinstein study that I'm not 04:08 PM
16 giving yet also asks the same questions that Bates
17 did and got all of the same answers, but that is off
18 the record.

19 Q. But you are not relying on that study?

20 A. No. 04:09 PM

21 Q. Okay. Anything else?

22 A. Well, I think that's quite indicative what
23 I've pointed to.

24 Q. Okay. Optimism bias, getting near the
25 end. 04:09 PM
208

1 MR. PIUZE: Maybe indicative of optimism 04:09 PM
2 and bias.

3 BY MR. McCARTER:

4 Q. Okay. Paragraph 8 in your federal report
5 talks about optimism bias. And my first question is 04:09 PM
6 what is optimism bias?

7 A. It's a complex of beliefs about risks to
8 oneself, risk to others. I would include in it also
9 optimism about quitting smoking. It's the sense
10 that risks to other people are less than the risks 04:10 PM
11 to yourself from doing some activity. But that is
12 just one aspect of it.

13 Q. Okay. And you say in your federal report
14 that optimism bias is a pervasive phenomenon; is
15 that right? 04:10 PM

16 A. Yes. You see it not just with smoking but
17 you see it with other activity, for example, most
18 people feel that they are among the safest of
19 drivers.

20 Q. And that's what you mean by pervasive that 04:10 PM
21 it doesn't just apply to smoking it applies to all
22 sorts of other activities?

23 A. Right.

24 Q. And are the majority of smokers do they
25 suffer from optimism bias? 04:11 PM
209

1 A. Well, again, it depends on how you are 04:11 PM
2 going to measure this bias. And often it's used in
3 some judgment of risk against the so-called real
4 risk, but then that gets into questions as to, you
5 know, what are you comparing it against. It's more 04:11 PM
6 often used when people say well, what a smoker says
7 what is the risk to me? What is the risk to other
8 smokers or -- I mean, that is one way to get at it.
9 And Weinstein in his chapter in the book

10 goes into the different ways in which it could be 04:12 PM
 11 looked at. I got like a meta-analysis of this I
 12 think as it applies to smoking concludes that
 13 although there are many ways to look at it that
 14 there seems to be considerable evidence for it.

15 I would go further than what Weinstein has 04:12 PM
 16 dealt with here and really in my mind the most
 17 significant optimism bias is what we've just been
 18 talking about this kind of over confidence in the
 19 ability to quit smoking soon.

20 Q. Let me ask you this: Part of -- one thing 04:12 PM
 21 that's said to represent optimism bias is whether a
 22 smoker thinks that their own personal risks are less
 23 than the risks to other smokers; right?

24 A. That's one. That's one, yes.

25 Q. Do most smokers think that the risks to 04:13 PM
 210
 1 themselves are less than the risks to others? 04:13 PM

2 A. I would have to go and look at the data
 3 specifically. There are many studies, you know,
 4 Weinstein reviews -- there are a lot of studies and
 5 in the studies they ask the questions in different 04:13 PM
 6 ways. So you would have to look at studies.

7 Q. There are a lot of different ways that
 8 people measure optimism bias to figure out if it
 9 really exists; right?

10 A. There are different kinds of definitions 04:13 PM
 11 of it, yeah. Yeah.

12 Q. Now, just suppose for a second that
 13 optimism bias didn't really exist?

14 A. Didn't?

15 Q. Suppose that optimism bias didn't really 04:14 PM
 16 exist in cigarette smokers, how would somebody go
 17 about demonstrating that optimism bias doesn't
 18 exist? What would they have to show you for you to
 19 be convinced about it?

20 A. They would have to show me that young 04:14 PM
 21 people who are initiating or are smoking, initiating
 22 smoking or smoking were accurate in predicting how
 23 long it would be that they would be smoking.

24 Q. Okay. Anything else?

25 A. Well, see the other ways to get at it are 04:15 PM
 211
 1 to ask people to estimate the probability that they 04:15 PM
 2 are going to get sick. The probability that other
 3 smokers would get sick. Or to -- or to estimate the
 4 risk to themselves, the risk that other people are
 5 bearing. Those are ways and that is what Weinstein 04:15 PM
 6 has done. And, you know, you get a little bit of
 7 inconsistency in that, but by in large you get a
 8 consistent picture that is, you know, what is called
 9 optimism bias. So while I think it is a pervasive
 10 phenomenon, to me it's not central except as in the 04:15 PM
 11 addiction. But I think that is the most significant
 12 thing.

13 The other thing gets involved is when you
 14 start to ask people to quantify the risk to
 15 themselves and the risk to others. Again, that is 04:16 PM
 16 focusing on the analytic side and the analytic
 17 thinking and when I come to believe that the driving
 18 force is the experiential side.

19 Q. Isn't asking somebody to predict how long
 20 they will be smoking isn't that asking the analytic 04:16 PM

21 side of the person for an answer?

22 A. Yes. But it has to do with an amount of

23 time as opposed to risk. Even then, I guess it's a

24 question -- yeah, if they were thinking about it

25 like in my Table 6.3 when you first -- Question 19F 04:16 PM
212

1 when you first started smoking how long did you 04:17 PM

2 think you would continue to smoke? Well, when you

3 first started smoking. Well, they really weren't

4 thinking about it. Okay? I mean, it kicks into the

5 extent that people are directed to think about 04:17 PM

6 something that they aren't naturally thinking about.

7 And I think when you do direct them and you direct

8 them to length of time you see it very strongly. If

9 you were to direct them to questions about risk and

10 probability, you see it. So I mean, it's around in 04:17 PM

11 that sense.

12 Q. So but you described earlier there is sort

13 of two ways that people act, one is based on their

14 feelings about things, that experiential type and

15 then there is sort of the thinking side of things 04:17 PM

16 and optimism bias really relates to the thinking

17 side; correct?

18 A. Well, that's a very good question. It has

19 been linked to and has been studied as an analytic

20 process with the kind of responses that are, you 04:18 PM

21 know, using probabilities and years and so forth.

22 Analytic material. I think what you are raising is

23 the question of whether optimism can exist in us in

24 terms of feelings which are more favorable than they

25 should be. 04:18 PM
213

1 Q. And optimism -- 04:18 PM

2 A. And I would say to my knowledge that

3 hasn't been studied directly, but I would expect

4 that given a lot of the modern work now recognize

5 the importance of risk as feeling, that is a whole 04:18 PM

6 concept that is, you know, respected now as what

7 risk is. Risk is a feeling. You would expect to

8 find it in feelings as well.

9 Q. But it's your opinion that when somebody

10 starts smoking they don't think about how long they 04:19 PM

11 are going to smoke for; right?

12 A. Yeah, that's not when they start smoking

13 they are just kind of into the pleasures of the

14 moment. They are short-term, what we call myopic.

15 So they are not concentrated like that. 04:19 PM

16 Q. So if you asked them later and they say

17 well, I think I'm only going to be smoking a few

18 years, why does that matter if they are never

19 thinking about how long they are going to be smoking

20 when they actually start? 04:19 PM

21 A. Well, I think in the back of the mind they

22 have the sense that they are not really going to be

23 in this very long. I mean, if you ask young

24 smokers, you know, are they a smoker? A high

25 percentage of young people who are smoking, some 04:19 PM
214

1 even some regular rate still think of themselves as 04:20 PM

2 nonsmokers. So it's one thing to answer a question

3 and say you are not thinking about it, but I mean, I

4 think they don't have a sense that they are in this

5 for the long-term. 04:20 PM

6 Q. If somebody thought that -- say if smokers
7 thought that quitting smoking would be easier than
8 nonsmokers thought it would be, would that be a form
9 of optimism bias?

10 A. It might be. On the other hand, smokers 04:21 PM
11 have experience with quitting that others don't.
12 They have a sense of the difficulty of it because
13 they are trying to quit and experience it
14 differently. So I don't know how that would quite
15 play out. 04:21 PM

16 Q. What if smokers thought that the long-term
17 risks of smoking were lower than nonsmokers did,
18 would that be evidence of optimism bias?

19 A. That were lower than nonsmokers? Yeah,
20 that would be some evidence of optimism bias. 04:21 PM

21 Q. What if smokers thought that other smokers
22 had higher risk of lung cancer than they personally
23 had, would that be evidence of optimism bias?

24 A. Yes.

25 Q. And if smokers thought that other smokers 04:21 PM
215
1 had higher risk of getting sick in general from 04:21 PM
2 smoking than they personally had would that be
3 evidence of optimism bias?

4 A. I think so.

5 Q. And if smokers thought that it would be 04:22 PM
6 easier for them to quit smoking than it would be for
7 other smokers to quit smoking, would that be
8 evidence of optimism bias?

9 A. I'm sorry. That it would be easier for?

10 Q. If smokers thought that it would be easier 04:22 PM
11 for them personally to quit smoking than it would be
12 for other smokers to quit smoking, would that be a
13 form of optimism bias?

14 A. Yeah, if they thought.

15 Q. If smokers thought that the cigarettes 04:22 PM
16 that they smoked were lower in tar and nicotine than
17 other smokers cigarettes, would that be a form of
18 optimism bias?

19 A. It would depend on what cigarettes they
20 smoked. It might be true. 04:22 PM

21 Q. So you would say that an optimistic smoker
22 who says that they smoke cigarettes that are lower
23 in tar and nicotine than other smokers cigarettes
24 and in fact smokes cigarettes that are, in fact,
25 lower in tar and nicotine than other smokers 04:23 PM
216
1 cigarettes that person would not be optimistic? 04:23 PM
2 A. They would be accurately reporting that
3 their cigarettes were lower in tar.

4 Q. If a smoker accurately reports that their
5 personal risks of smoking are lower than the average 04:23 PM
6 smokers would that person suffer from optimism bias?

7 A. Not necessarily. I mean, it depends when
8 you say "bias" you have to have something to compare
9 it to that you say the response is biased. So a
10 person who smokes one cigarette a month and says 04:23 PM
11 their risks are lower than the average smoker, I
12 wouldn't call that a bias statement.

13 Q. And what about a smoker who accurately
14 perceived that their chances of quitting smoking are
15 better than the average smokers, would that person 04:24 PM
16 suffer from optimism bias?

17 A. Well, by definition, no. If they are
18 accurate and the bias is not -- you know, is really
19 antimon of accurate.

20 Q. So if somebody is accurate about near 04:24 PM
21 perception of a certain risk they are not suffering
22 from optimism bias?

23 A. That's true.

24 Q. If smokers thought that they inhaled less
25 deeply than other smokers when they smoke, would 04:24 PM
217

1 that be evidence of optimism bias? 04:24 PM
2 A. Depends whether they do or not.

3 Q. So if they were wrong about it then that
4 would be evidence of optimism bias?

5 A. Yes. 04:25 PM
6 Q. Now, the Annenberg survey provides
7 information on whether smokers think that it's
8 easier to quit smoking than nonsmokers do; correct?

9 A. I think there is a question like that in
10 there. 04:25 PM
11 Q. And would that be -- could you look and
12 see if it's Question 14?

13 A. Right. Yeah.

14 Q. Okay. And if you flip to the survey in
15 Annenberg I, Question 12 in that survey asks smokers 04:26 PM
16 to rate the risks of smoking to smokers in general;
17 right?

18 A. Annenberg I, question?

19 Q. 12.

20 A. That's not what I get. On Page 308 04:26 PM
21 Question 12?

22 Q. Well, it asks people --

23 A. This is Appendix A, Page 308, Question 12.

24 Q. Right. Question 12 asks smokers to agree
25 or disagree as to the extent to which some amount of 04:26 PM
218

1 cigarette smoking can damage them; correct? 04:26 PM
2 A. Yeah. Okay.

3 Q. And that's -- and they are talking about
4 smokers in general there; right? Not damage to
5 yourself? 04:27 PM
6 A. Yeah.

7 Q. And Question 19 of that same survey asks
8 about -- asks smokers about their own personal risk
9 of getting lung cancer; correct?

10 A. By smoking you are increasing the chances 04:27 PM
11 you will get lung cancer when you get old, is that
12 the question?

13 Q. Yes.

14 A. Yes.

15 Q. So if you wanted to check for optimism 04:27 PM
16 bias and check if smokers rate their own personal
17 risk lower than the rated the risk to other smokers,
18 you could compare the answers to Question 12 to the
19 answers to Question 19; correct?

20 A. 19 asks them to -- whether they agree that 04:27 PM
21 by their smoking it increases the chances they'll
22 get lung cancer. And Question 12 -- they are kind
23 of different questions. I mean, there may be some
24 way to link them, but they are different questions.
25 And Question 12 is what you call a forced-choice. 04:28 PM
219

1 And Question 19 is an agree or disagree. I would 04:28 PM

2 say they are not exactly comparable questions.
3 Q. Do you think it would be unreasonable to
4 compare those two questions to determine whether
5 smokers are optimistic? 04:28 PM
6 A. I think it's a not useful comparison.
7 Q. Now, on issues of optimism bias do you
8 recognize Dr. Weinstein as somebody who has a
9 greater degree of knowledge than you?
10 A. Yes. 04:29 PM
11 Q. And if a question arose as to whether data
12 in a survey demonstrated the existence of optimism
13 bias and Dr. Weinstein had a judgment on the
14 question, would you defer to him?
15 MR. PIUZE: The question really calls for 04:29 PM
16 speculation at this point. So I'm going to object
17 to the form of the question.
18 Please answer it, if you can, as asked.
19 THE WITNESS: I think he is more of an
20 expert on optimism bias than I am. And that doesn't 04:29 PM
21 mean that I would always defer to him.
22 BY MR. McCARTER:
23 Q. Fair enough. Paragraph 8 of your federal
24 report. I'm looking at the last sentence there.
25 You talk about strong optimism bias and its 04:29 PM
220
1 attendant underestimation of smoking risks. First 04:30 PM
2 of all, what do you mean by "strong optimism bias"?
3 A. Bias that is marked. I don't know what
4 strong is. There is no calibration term for that.
5 I mean, it's -- it was an opinion that there was 04:30 PM
6 significant bias in cigarette smokers.
7 Q. And the phrase "attendant underestimation
8 of smoking risks," what do you mean by that?
9 A. Well, that's in part because that is the
10 way it's defined is, you know, as having a lower 04:30 PM
11 estimation of risk than some other group. I mean,
12 that is part of the definition. So, you know, I
13 think this is also linked to the optimism about
14 quitting is likely to lead one to more likely take
15 these risks. 04:31 PM
16 Q. Are you saying there is a correlation
17 between a smoker being optimistic and the smoker
18 rating the risks of smoking lower than other smokers
19 do?
20 A. I say that there is a correlation because 04:31 PM
21 that is part of the definition of optimism. That is
22 one of the definitions of optimism. So it's
23 built-in.
24 Q. Do you believe that optimistic smokers
25 rate the risks of smoking to be lower than 04:31 PM
221
1 pessimistic smokers do? 04:32 PM
2 A. How are you -- optimistic smokers and in
3 what sense? If you are defining it by the activity,
4 then they do rate the risk as lower.
5 Q. Optimistic smoker defined as a person who 04:32 PM
6 thinks that their personal risks are lower than the
7 risks faced by smokers in general?
8 A. In a sense they are saying that their
9 risks are lower, so I would say "yes" to the
10 question. 04:32 PM
11 Q. And you would expect pessimistic smokers
12 to rate the risks of smokers to be higher than

13 optimistic smokers do; right?
14 A. By the way that optimism and pessimism are
15 defined. 04:32 PM
16 Q. Have you made any attempt to associate
17 optimism bias with anything that Philip Morris or
18 any other tobacco company said or did?
19 A. Not directly, no.
20 Q. Have you done it indirectly? 04:33 PM
21 A. I haven't.
22 Q. Okay. We're on to Dr. Viscusi now.
23 Paragraph 12. You talk about your first criticism
24 of Viscusi is that he fails to take into account or
25 test for the affects of optimism bias; correct? 04:33 PM
222
1 A. Yes. 04:33 PM
2 Q. Now, when Dr. Viscusi asks his question
3 about the risks of lung cancer to smokers in general
4 respondents estimate that the probability of getting
5 lung cancer is generally three to five times higher
6 than it actually is; right? 04:34 PM
7 A. Yes.
8 Q. And so even if smokers see the risks to
9 themselves as lower as they see the risks to other
10 smokers, it's still possible, is it not, that 04:34 PM
11 smokers perception of the risks of lung cancers to
12 themselves is higher than the actual probability;
13 right?
14 A. Well, this is a -- as I say, this is a
15 secondary affect. The method that he's using is so 04:34 PM
16 problematic that it's even to -- I mean, even though
17 -- yes, it does neglect for optimism bias. I mean,
18 this is talking about other people and not you, and
19 there is an effect. In fact, the Windschitl paper
20 which I have given you, I think demonstrates a self 04:34 PM
21 other effect which cuts the response in half or
22 something, you know, self the number is half that
23 you give to others.
24 So, clearly, it makes a difference in
25 those estimates, but that is not the -- I mean yeah, 04:35 PM
223
1 it can reduce the estimate by half, but that is not 04:35 PM
2 the problem. That is not the -- there are worse
3 problems than that. This is only one element that
4 is beginning.
5 Q. And those other problems you describe in 04:35 PM
6 the rest of the paragraph in this report; right?
7 A. Right. Well, yeah, we've already talked
8 about, you know, morbidity, appreciating the
9 consequences. We already talked about that.
10 Q. We're going to go one by one. I just want 04:35 PM
11 to talk now about the optimism bias. So this
12 Windschitl paper the responses indicate that the
13 risk or estimate that the risks to themselves is
14 about half of that of the risks to others; right?
15 A. I think so, as I recall. 04:36 PM
16 Q. So even with that, if you lop off half of
17 the over estimate that smokers make in terms of the
18 risk of lung cancer to others in Viscusi's question,
19 and you cut that in half, smokers would still be
20 over estimating the risk to themselves of getting 04:36 PM
21 lung cancer; correct?
22 A. No, they would be giving you a number that
23 was higher than the actuary risk number.

24 Q. That is what I mean.

25 A. They would be constructing a number. They 04:36 PM
224

1 would be pulling a number out of the air that was 04:36 PM
2 higher than the actuarial number.

3 Q. So even if you ask smokers what is your
4 risk of getting lung cancer or your probability of
5 getting lung cancer as opposed to the probability of 04:36 PM
6 other smokers, it's still likely that they would
7 over estimate the statistical or they would give you
8 a number that is higher than the actual probability
9 of their getting lung cancer?

10 A. Depends how you ask the question. And 04:37 PM
11 that's the whole -- there are many ways to ask this
12 question. They all give different answers. Many
13 equivalent ways to ask the question. And you don't
14 get a consistent answer.

15 Q. No matter which way you ask the question 04:37 PM
16 about the risk of lung cancer don't smokers always
17 or don't a great majority of smokers always say that
18 the risks are very high of getting lung cancer
19 either using the words very high or using some
20 equivalent numerical estimate? 04:37 PM

21 A. Their own personal risk of getting lung
22 cancer? Is that what you are asking?

23 Q. No. Right now I'm asking about the risk
24 of smokers in general getting lung cancer.

25 A. And asked of who? 04:38 PM
225

1 Q. Asked of smokers. Let me start over. 04:38 PM
2 There are a variety of ways you can ask questions to
3 get at the same underlying construct that Viscusi
4 tries to get at; correct?

5 A. Um-hum. 04:38 PM

6 Q. And you've seen those questions asked in a
7 lot of different ways; right?

8 A. Um-hum.

9 Q. And no matter which way you ask the
10 question, smokers always -- a large majority of 04:38 PM
11 smokers always say the risk of getting lung cancer
12 is either very high using the words very high or
13 they give some numerical estimate that is very high
14 as well?

15 A. Well, if you ask them if you smoke a pack 04:38 PM
16 of cigarettes for 40 years or whatever it is per day
17 they say the risk is high. So, again, this is a
18 cumulative aspect the fact that, yeah, they do
19 believe that if you smoke heavily for many, many
20 decades you bear a high risk of getting lung cancer 04:38 PM
21 and they don't expect to be there to be in that
22 position.

23 Q. Now, your second criticism of Dr. Viscusi
24 is you say he fails to demonstrate that smokers
25 appreciate the unpleasant debilitating consequences 04:39 PM
226

1 of smoking induced morbidity. And here you are 04:39 PM
2 saying what you said before that he fails to
3 demonstrate that smokers do not appreciate the
4 consequences of smoking; is that right?

5 A. Yes. 04:39 PM

6 Q. And your next criticism is that
7 Dr. Viscusi fails to demonstrate that smokers
8 appreciate the cumulative nature of smoking risks

9 and the power of addiction that makes it so
10 extraordinarily difficult for them to stop smoking 04:39 PM
11 when they wish to do so?

12 A. Yes.

13 Q. Now, when you say that smokers fail to
14 appreciate the power of addiction, is this based on
15 anything other than what you've discussed earlier in 04:40 PM
16 your report when you opined that smokers don't
17 appreciate the risks of addiction?

18 A. It's basically what I was discussing
19 before, work like Loewenstein presents the
20 difficulty of appreciating. 04:40 PM

21 Q. Your next criticism of Viscusi says --
22 this is over on Page 7, it's labeled 4 -- that
23 Dr. Viscusi fails to demonstrate that warnings or
24 statistics about the risks of smoking are motivating
25 to adolescents whose behavior appear to be driven 04:40 PM
227

1 primarily by impulse and affect. And is it your 04:40 PM
2 opinion that the risks of smoking are not motivating
3 to adolescence?

4 A. I haven't seen evidence that the
5 statistics, the epidemiology of smoking is a factor. 04:41 PM
6 It might be to the extent that a young person
7 decides not to smoke, it may be that they've seen
8 some of that. But certainly as we've seen the ones
9 who do start to smoke say they are not thinking that
10 way. 04:41 PM

11 The material in the tobacco documents seem
12 to say that, you know, people aren't processing
13 health risk information and so, you know, what I'm
14 saying is when they are over estimating the risks
15 he's basing that on a very narrow type of analysis 04:42 PM
16 comparing his number that he elicits with
17 statistical numbers. So they may not -- the fact
18 that he leads them to construct a number which is
19 bigger than some actuary number doesn't mean that
20 that number has any life of its own outside of that 04:42 PM
21 question in their thinking about the risk.

22 Q. Now, in this sentence you go beyond
23 saying -- you don't just talk about statistics, you
24 talk about warnings as well. So is it your opinion
25 that warnings of the risks of smoking are not 04:42 PM
228

1 motivating to adolescents? 04:42 PM

2 A. I don't think that they are. Although,
3 again, they may be to some, because again, we find
4 the majority of adolescents don't start smoking to
5 those who do start, I don't see evidence that they 04:43 PM
6 have considered the warnings and weighed the
7 warnings against the benefits in the way that
8 Viscusi argues. Viscusi talks about a risk utility
9 balance, you know, he views the young people as
10 feeling like a cost accountant balancing the risks 04:43 PM
11 against the benefits in a very analytic way. And
12 that doesn't seem to be the way that kids think
13 about this.

14 Q. Okay. Is it your opinion that the risks
15 of smoking are not motivating to those people who do 04:43 PM
16 start smoking?

17 A. Well, they say they are not thinking about
18 them until after they start smoking. Once they've
19 been smoking for a while then they suddenly say that

20 they see them now differently than they did before. 04:43 PM
 21 Q. So is that a yes?
 22 A. Yes.
 23 Q. Now, in your fifth criticism of Viscusi is
 24 that he uses to obtain quantitative estimates of
 25 risk perceptions questions that are unreliable in 04:44 PM
 229
 1 your opinion? 04:44 PM
 2 A. Yes.
 3 Q. Doesn't reliability have a specific
 4 meaning in the social science and psychology that is
 5 different from its every day meaning? 04:44 PM
 6 A. It's used different ways. Sometimes we
 7 distinguish reliability and validity.
 8 Q. Right.
 9 A. And sometimes reliability is used to mean
 10 validity and sometimes it's used to mean 04:44 PM
 11 consistency, and they go together. If something is
 12 not reliable, then it's not valid. I mean, if you
 13 can't elicit it consistently, you have to question
 14 its validity.
 15 Q. Doesn't reliability in the sense when you 04:45 PM
 16 have -- when you are distinguishing between
 17 reliability and validity in your field, doesn't
 18 reliability refer to the ability to ask the same
 19 exact question again and get the same results that
 20 somebody got the first time they asked the question? 04:45 PM
 21 Doesn't it have to deal with replicability in that
 22 sense?
 23 A. No, it can also refer to the inferences
 24 that you draw from the data being reliable as would
 25 you -- which means you could ask the question in 04:45 PM
 230
 1 equivalent form and get a different answer. I would 04:45 PM
 2 say that is a form of reliability. It doesn't have
 3 to be the exact question. I mean, that is a strict
 4 -- what you are talking about is a strict form of
 5 test retest with the exact same question. 04:46 PM
 6 Q. And you have asked Viscusi's question in
 7 your surveys using the same words that he used;
 8 correct?
 9 A. Yes.
 10 Q. And when you have done that you got the 04:46 PM
 11 same results that Viscusi got asking his question?
 12 A. Absolutely.
 13 Q. And sometimes you even got higher
 14 estimates?
 15 A. Exactly. 04:46 PM
 16 Q. The sentence that you have after the last
 17 sentence I read says:
 18 "Slight changes in wording
 19 produces a much smaller number for
 20 lung cancer. Further supporting 04:46 PM
 21 the view that smokers have not
 22 thought carefully about the risk
 23 they are taking."
 24 And are you referring to -- when you say
 25 slight changes in wording, are you referring to the 04:46 PM
 231
 1 difference in wording between Questions 1 and 3 of 04:46 PM
 2 the first Annenberg survey?
 3 A. That's an example.
 4 Q. Would you agree with me that the wording

5 difference between Question 1 and 3 is not slight? 04:47 PM
6 It's not a slight change in wording?
7 A. I don't know what the definition of
8 "slight" would be here. Basically this change is to
9 introduce some other causes of death and ask to
10 estimate all of these including lung cancer. 04:47 PM
11 Q. Well, slight is a word that you use in
12 your report?
13 A. Um-hum.
14 Q. Using your definition of slight that you
15 were using there, would you agree that the change of 04:47 PM
16 wording in Question 1 and 3 in the first Annenberg
17 survey was not slight?
18 A. I don't want to argue about the word
19 slight. I would say changes in wording -- I mean
20 there is a sense in which maybe slight isn't the 04:47 PM
21 optimal word. What it is it's not asking a
22 different question about lung cancer. Okay? In
23 that sense the question what it is asking about
24 estimating the number of people who have died from
25 lung cancer is identical from Question 1 to Question 04:48 PM
232
1 3. It's not really a change. It's really a change 04:48 PM
2 in the context of the question. So the lung cancer
3 question is identical. It's not even a slight
4 change. It's identical to the first question.
5 Q. And the last part of the sentence I read 04:48 PM
6 you state that:
7 "Further supporting the view that smokers
8 have not thought carefully about
9 the risks they were taking."
10 Now, were you stating some proposition 04:48 PM
11 here that when people change their answers in
12 response to differently worded questions that it
13 indicates that they have not thought carefully about
14 the underlying construct that the question is asking
15 about? 04:49 PM
16 A. Well, in a sense, yes. If you had a
17 number in your head -- if you had an answer -- like
18 if you ask a person their age and you changed the
19 wording around even more than slight changes of
20 wording you would probably elicit the same number 04:49 PM
21 from them regardless of even more significant
22 changes of wording because they know their age. If
23 you asked them about some -- well, leave it at that.
24 That if they know, if they have the number in their
25 head, they will give it to you. If they don't have 04:49 PM
233
1 the number in their head and they are constructing 04:49 PM
2 it on the spot, then it will be very sensitive to
3 these -- to the contextual aspects of the how the
4 question is asked.
5 Q. Is there some literature you can point me 04:50 PM
6 to that supports the proposition that respondents
7 giving different answers to differently worded
8 question means that they haven't thought about the
9 underlying issue?
10 A. I didn't say they haven't thought about 04:50 PM
11 it. I would say they don't have that number. And
12 if they had thought about it in the quantitative
13 epidemiological way they would be more likely to
14 have a number in mind. You know, if they had
15 dwelled upon what is the probability that I am going 04:50 PM

16 to get cancer, and, really thought hard about it,
 17 you know, come to some -- and created that number in
 18 their mind that they would be less likely to change
 19 that number when you ask the same question
 20 surrounded by some other causes of death. 04:51 PM

21 Q. You used the word "thought carefully" in
 22 here, so let me put that in my question. Is there
 23 some literature you can cite me to that supports the
 24 proposition that respondents giving different
 25 answers to differently worded questions indicates 04:51 PM
 234

1 that they have not thought carefully about the issue 04:51 PM
 2 underlying the question?

3 A. Yeah, it's in part the literature we've
 4 been talking about, the data we've been talking
 5 about where they say they haven't thought about 04:51 PM
 6 this, they don't think about this, the health risks.
 7 It's related to the material in the tobacco
 8 documents which says that these young people don't
 9 think about the health risks, they don't pay
 10 attention to it, they are not focusing on it. It's 04:51 PM
 11 not of concern to them. There is a lot of
 12 literature that fits into this.

13 Q. Can you point me to any literature in the
 14 field of social science research that supports that
 15 proposition? 04:51 PM

16 A. What? That what if you are not -- if you
 17 are not thinking?

18 Q. That if you give -- if a respondent gives
 19 different answers to differently worded questions,
 20 it indicates that the respondent has not thought 04:52 PM
 21 carefully about the issue?

22 A. You can give a different response to a
 23 differently worded question for many reasons, but
 24 we're talking about a quantitative response, a
 25 number. You are asking a person for a number that 04:52 PM
 235

1 represents the likelihood of something happening. 04:52 PM
 2 I'm assuming that, first of all, there is a lot of
 3 data that suggests they are not thinking about risk
 4 in this way. And that if they are not thinking
 5 about it in this way, if the number isn't firm in 04:52 PM
 6 their mind they wouldn't give you the same number on
 7 two very similar occasions.

8 Q. I just want to know if you can point me to
 9 some literature that speaks of this issue as a
 10 general proposition in the field of survey research 04:53 PM
 11 or social science research?

12 A. I think that there is a -- there is a
 13 literature on something called arbitrary careers.

14 Q. Any other literature that you can think
 15 of? 04:53 PM

16 A. Well, it speaks to this question. The
 17 difficulty people have in producing quantitative
 18 estimates that are reliable and consistent about
 19 things which are kind of judgemental.

20 Q. Is there any other literature that you can 04:54 PM
 21 refer me to?

22 A. Not offhand.

23 Q. You mentioned in passing on one of your
 24 answers that there are questions in the Annenberg
 25 surveys that asked people whether they thought about 04:54 PM
 236

1 the health risks of smoking; right? 04:54 PM
2 A. Yes.
3 Q. Okay. The questions in the Annenberg
4 survey that ask people whether they thought about
5 the health risks of smoking only asked them if they 04:54 PM
6 thought about the health risks of smoking during
7 certain periods of time; correct?
8 A. Correct.
9 Q. There is no question in there that asked
10 smokers if they ever thought of the health risks of 04:54 PM
11 smoking; right?
12 A. If they ever thought of the health risks
13 of smoking? I don't think there is a question
14 worded that way.
15 MR. McCARTER: Just wanted to clarify 04:54 PM
16 that.
17 Why don't we take a break. We're pretty
18 close to being done.
19 (Recess taken.)
20 (TIME NOTED: 4:54 P.M.)
21
22
23
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25

237

1 I declare under penalty of perjury
2 under the laws of the State of California
3 that the foregoing is true and correct.
4 Executed on _____, 2002,
5 at _____, California.
6
7
8
9

10 _____
11 SIGNATURE OF THE WITNESS
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1 STATE OF CALIFORNIA) ss:
2 COUNTY OF LOS ANGELES)
3
4 I, KELLIE MITCHELL, CSR No. 7273, do
5 hereby certify:
6
7 That the foregoing deposition testimony of
8 PAUL SLOVIC was taken before me at the time and
9 place therein set forth, at which time the witness
10 was placed under oath and was sworn by me to tell
11 the truth, the whole truth, and nothing but the

12 truth;
13 That the testimony of the witness and all
14 objections made by counsel at the time of the
15 examination were recorded stenographically by me,
16 and were thereafter transcribed under my direction
17 and supervision, and that the foregoing pages
18 contain a full, true and accurate record of all
19 proceedings and testimony to the best of my skill
20 and ability.

21 I further certify that I am neither
22 counsel for any party in said action, nor am I
23 related to any party to said action, nor am I in any
24 way interested in the outcome thereof.

25

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1 IN WITNESS WHEREOF, I have subscribed my name
2 this 13th day of May, 2002.

3

4

5

6

7

KELLIE MITCHELL, CSR No. 7273

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I N D E X

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VOLUME I

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TUESDAY, MAY 7, 2002

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6

WITNESS

EXAMINATION

7

8

PAUL SLOVIC

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(By Mr. McCarter)

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(By Mr. McCarter)

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